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ABSTRACT

The predictions in "Workforce 2000" and "Civil Service 2000" were examined with regard to work and workers. Focus was on demographic changes that had occurred and were expected to occur in the civilian and federal labor force and were relevant to federal employment policy formation. Activities included review of demographic data and review of research relative to labor shortages, skills gaps, and demographic changes. Labor economists and other experts often disagreed with predictions that widespread labor shortages and skills mismatches were likely to occur by 2000. Experts generally agreed that the demographic composition of the civilian labor force had changed and would continue to change. The most dramatic change was the entry of women into the labor market; more recent changes included the increasing presence of racial and ethnic minorities in the work force and the concentration of workers in the middle-age category. These demographic changes and conditions were particularly present in the federal work force, although demographic characteristics varied by agency and census region. Many of these changes and conditions were more prevalent in the federal than in the nonfederal sector. Findings implied that federal policymakers can take action to respond to changing demographic conditions and each agency should examine its own work force to determine its needs. (Objectives, scope, and methodology are sketched in the appendix and a 65-item bibliography is attached.) (YLB)

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United States General Accounting Office

GAO

Report to Congressional Committees

ED346241

March 1992

THE CHANGING WORKFORCE

Demographic Issues Facing the Federal Government

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United States
General Accounting Office
Washington, D.C. 20548

General Government Division

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March 24, 1992

The Honorable John Glenn
Chairman, Committee on
Governmental Affairs
United States Senate

The Honorable William L. Clay
Chairman, Committee on
Post Office and Civil Service
House of Representatives

We are examining a number of issues related to federal recruitment and retention. This report provides information on some of the predictions made in Workforce 2000 and Civil Service 2000, focusing on the demographic changes that have occurred and are expected to occur in the civilian labor force and the federal workforce. Subsequent reports will examine these issues more fully, describing federal employee attitudes and what strategies can be employed to address future workforce conditions.

We are sending copies of this report to other congressional committees, the Director of OPM, and other interested parties.

The major contributors to this report are listed in appendix II. Please contact me on (202) 275-6204 if you have any questions concerning this report.

Rosslyn S. Kleeman

Rosslyn S. Kleeman
Director, Federal Workforce
Future Issues

Executive Summary

Purpose

In 1987, a widely noted report entitled Workforce 2000: Work and Workers for the 21st Century predicted that serious challenges awaited the nation's employers in the 21st century.[1] According to the report, tight labor markets; mismatches between job requirements and available workers' skills; and dramatic demographic changes, including fewer younger workers and many more women, immigrants/minorities, and older persons in the workforce, will require employers to transform their human resource systems. A companion report entitled Civil Service 2000 gave similar warnings to the federal government about its employment programs.[2] Are these predictions valid? Is the government prepared to deal with the coming challenges? Are some of the workforce developments more pressing than others? As part of a series of reviews of the government's ability to attract and retain quality employees, GAO examined the implications of the reports' predictions for federal policymakers and workforce planners.

Background

The federal government must recruit, develop, and retain a quality workforce if it is to carry out its various missions. However, changes in labor force conditions (labor shortages, skills mismatches, and demographic changes) predicted in Workforce 2000 and Civil Service 2000 can inhibit the federal government's ability to perform these basic human resource management functions. Workforce planning, therefore, is increasingly important in these turbulent conditions. Unfortunately, studies by GAO and others indicate federal agencies often do not do a very good job of workforce planning, even in more tranquil circumstances.

To determine whether experts generally agree these changes will occur, GAO did an extensive review of the literature relative to labor shortages, skills gaps, and demographic changes. GAO also interviewed officials from the Bureau of Labor Statistics (BLS) and the Office of Personnel Management (OPM). To examine the demographic composition and changes in the federal and nonfederal workforces, GAO obtained data from OPM and BLS for each even-numbered year from 1976 through 1990.

[1]William B. Johnston, Workforce 2000: Work and Workers for the 21st Century, (Indianapolis: Hudson Institute, June 1987).

[2]William B. Johnston and others, Civil Service 2000, (Washington, D.C.: Office of Personnel Management, June 1988).

Results in Brief

Labor economists and other experts do not agree that labor shortages and skills gaps are likely to occur by the year 2000. Experts generally agree, however, that the demographic composition of the labor force has changed and will continue to change in the future. The OPM and BLS data indicated that many of these workforce changes and conditions are more prevalent in the federal workforce than in the nonfederal sector.

Therefore, federal workforce planners should not assume that labor shortages and skills gaps will occur. However, changes in the number of women, minorities, and older workers in the federal government are real and can be addressed through a variety of human resource policies and programs such as child care, flexible work schedules, diversity training, and reemployment incentives. Demographic differences within the federal workforce indicate that different policies and programs may be needed in different agencies and regions. In deciding which strategies should be employed to address these demographic changes, workforce planners should also consider the specific needs of the workforce and the organization.

GAO's Analysis

Experts Did Not Agree That Labor Shortages and Skills Gaps Will Occur

Labor economists and other experts often disagreed with predictions that there will be widespread labor shortages and skills mismatches by the year 2000. Critics asserted that what labor shortages occur will probably not be widespread but confined to certain industries, occupations, and locations. They also noted that changes in immigration can affect labor force growth, that slow population and labor force growth should also slow the demand for goods and services, and that other countries with slow labor force growth rates have not experienced tight labor markets.

They also argued that the skill requirements of jobs will rise slowly, with fast-growing/high-skill technical jobs comprising only 4 percent of all jobs by the year 2000. Federal workforce shortages and skill requirements are also believed to be difficult to anticipate because of the unpredictability of federal policies and programs.

Demographic Changes Have Occurred and Are Especially Present in the Federal Workforce

Experts do agree that the demographic composition of the civilian labor force has changed and will continue to change. The most dramatic of these changes has been the entry of women, particularly married women with children, into the labor market since 1950. More recent changes include the increasing presence of racial and ethnic minorities in the workforce and the concentration of the workforce in the middle-age category.

These demographic changes and conditions are particularly present in the federal workforce. For example, the percentage of the workforce that was women changed more from 1976 through 1990 in the federal government (up by 7.2 percentage points) than in the nonfederal sector (up by 4.2 percentage points). The entry of women into federal professional and administrative jobs was especially dramatic—an increase of 162 percent between 1976 and 1990. Throughout this period, the federal government also had a higher percentage of minority employees, and its employees averaged about 5 years older than the nonfederal workforce.

Federal Workforce Composition and Changes Varied Between Agencies and Across Regions

The federal government is not, however, a single entity, and demographic characteristics varied by agency. In 1990, for example, nearly two-thirds of the Department of Health and Human Services' workforce was women, compared with about one-fourth of the Department of Transportation's workforce. Similarly, a small percentage of the workforce in some agencies was minorities (e.g., 16 percent at the National Aeronautics and Space Administration), while others had sizable minority populations (e.g., about 50 percent in the Department of Education). The average age of workers varied by over 6 years from one agency to another in 1990.

The agencies also varied in their rates of change in these characteristics between 1976 and 1990. Some changed very little in their gender and race/national origin composition (e.g., the Department of Labor), while others were demographically transformed (e.g., the Federal Deposit Insurance Corporation, which went from about 30 percent female in 1976 to over 50 percent female in 1990).

There were also some demographic differences between census regions in 1990. Some regions had relatively few minorities, while others were over one-third minority. The regions differed little in gender composition.

Implications

The implications of these findings for federal human resource management are several. Experts believe that any future labor shortages or skills mismatches will probably be in particular occupations, industries, and geographic areas. With the passage of the Federal Employees Pay Comparability Act of 1990, federal agencies should be better able to compete with nonfederal employers by providing locality pay, recruitment and retention bonuses, and substantial special pay rates in certain occupations and areas.

Federal policymakers and workforce planners can take action now to respond to changing demographic conditions. For example, policies to address the increasing numbers of women in the workforce and employees' difficulties in balancing work and family responsibilities can include child and elder care programs, flexible work schedules, flexible leave policies, flexible benefits, and flexible work places. Some such programs already exist in the federal government but can be expanded and enhanced. Development of such policies can improve the availability of workers and make the federal government more competitive in attracting and retaining employees. Failure to do so could make the federal government more uncompetitive, because nonfederal employers are increasingly offering these programs.

Because these demographic conditions vary by agency and region, each agency will have to examine its own workforce to determine its needs before initiating policy responses it believes are needed. That examination should include not only workforce demographics but also employees' needs and preferences and the organizations' environment.

Recommendations

Because of the descriptive nature of this report, GAO is not making recommendations.

Agency Comments

GAO did not obtain formal agency comments on this report but discussed its contents with officials at BLS and OPM. They suggested certain technical changes, which were incorporated into the report.

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Abbreviations

BLS	Bureau of Labor Statistics
CPDF	Central Personnel Data File
CPS	Current Population Survey
CRS	Congressional Research Service
EPA	Environmental Protection Agency
EPI	Economic Policy Institute
FDIC	Federal Deposit Insurance Corporation
FEPCA	Federal Employees Pay Comparability Act
GSA	General Services Administration
HHS	Department of Health and Human Services
HUD	Department of Housing and Urban Development
NASA	National Aeronautics and Space Administration
OPM	Office of Personnel Management
PCMI	President's Council on Management Improvement
VA	Department of Veterans Affairs

Background, Objectives, and Approach

In June 1987, the Hudson Institute published Workforce 2000: Work and Workers in the 21st Century—a report that has become an essential reference book for the personnel management community.[1] Prepared for the Department of Labor, the report documented labor market trends and portrayed the economic and workforce conditions its authors believed would exist at the beginning of the next century. The report's conclusions have become conventional wisdom in many human resource management circles, establishing the context within which virtually all policy discussions of education and training take place.

With regard to work and workers in the year 2000, Workforce 2000 said that certain demographic "facts" would shape the destiny of the American workforce and the economy. Specifically, the report predicted that between 1987 and 2000 the following changes would occur:

1. The population and the labor force will grow more slowly than at any time since the 1930s because of declining birth rates in the post-baby boom generation.[2]

2. Labor markets will be tighter because of the slower workforce growth and the associated smaller reservoir of well-qualified talent.

3. The average age of the population and the workforce will rise primarily because of the aging of the baby boom generation. Also, the pool of young workers entering the labor market will shrink.

4. The "feminization" of the workforce (i.e., the growing percentage of the workforce that is female) that has occurred in recent decades will continue.

5. Blacks, Hispanics, and other minorities will make up a large share of any labor force increase.[3]

6. Immigrants will be the largest share of the increase in the population and the labor force since the first World War.

[1]William B. Johnston, Workforce 2000: Work and Workers for the 21st Century (Indianapolis: Hudson Institute, June 1987).

[2]In this report, the term "labor force" includes both individuals working and those looking for work. The "baby boom" generation is generally considered to be those persons born between 1946 and 1964.

[3]In this report, the term "minorities" will be used to describe Blacks, Hispanics, Asians, and other people of color. The term "White" will be used to denote Whites who are not of Hispanic origin.

Along with these changes in the size and composition of the labor force, the report also predicted that the jobs of the future

> will be substantially different from those in existence today. A number of jobs in the least-skilled job classes will disappear, while high-skilled professions will grow rapidly. Overall, the skill mix of the economy will be moving rapidly upscale, with most new jobs demanding more education and higher levels of language, math, and reasoning skills.[4]

While the skill requirements of the jobs of the future were predicted to increase rapidly, Workforce 2000 said that many millions of new workers will lack even the basic skills essential for employment.[5]

Thus, Workforce 2000 suggested that the world of work at the turn of the century would be radically different than in the late 1980s. Labor markets were predicted to be tighter as a result of slow labor force growth. A skills mismatch or "gap" was predicted to emerge between the abilities of new workers and the increasing skill requirements of new jobs. Women, minorities, and immigrants were expected to dominate the small net growth of workers, altering traditional workforce demographic patterns. The report went on to say that if the United States is to continue to prosper as it has since 1900, policymakers must find ways to (1) maintain the dynamism of an aging workforce; (2) reconcile the conflicting needs of women, work, and families; (3) integrate Black and Hispanic workers fully into the economy; and (4) improve the educational preparation of all workers.

In June 1988, the Hudson Institute published Civil Service 2000, which echoed many of the same themes of Workforce 2000, but in relation to the federal workforce.[6] Requested by the Office of Personnel Management (OPM), the report predicted that federal jobs will require increasingly higher skills, that tight labor markets will make hiring qualified federal workers more difficult, and that the federal workforce will be increasingly composed of women and older workers. The report concluded that the federal government faces an emerging "crisis of competence" in recruiting and retaining a qualified workforce.[7]

[4]Johnston, Workforce 2000, p. 96.

[5]Johnston, Workforce 2000, p. 102.

[6]William B. Johnston and others, Civil Service 2000 (Washington, D.C.: Office of Personnel Management, June 1988).

[7]Johnston and others, Civil Service 2000, p. 29. Other reports have also predicted that labor shortages could affect federal operations. For example, Meeting Public Demands: Federal Services in the Year 2000 by John F. W. Rogers (Jan. 1988, p. 101) said that "depressed birth rates of the 1970's could lead to personnel shortages in certain highly-skilled federal job categories."

Since the publication of these two reports, numerous books and articles have been written warning employers to take heed of the studies' findings and prepare for the coming labor shortages, skills gaps, and the radically different workforce composition of the future.[8] The authors of these publications suggest that unless employers change their ways of recruiting, developing, and retaining employees they will fall behind employers who have transformed their human resource systems. In the words of one author,

> (t)his is the newest commandment of corporate life, and it needs to become ingrained in the mind of every executive, every planner, every entrepreneur, and every human resources manager in corporate America; The worker shortage is coming, it will affect your company, and you either can plan and act ahead of time to preserve your company's strength, or you can wait and . . . be overwhelmed.[9]

Workforce 2000's predictions are considered infallible in some of these articles. For example, one author said that "(f)or human resources experts, there is little question that a labor shortage will occur. The question is when." Thus, he says, "companies need to plan for the coming labor shortage and implement accurate skill-assessment programs if they want to succeed in the 1990s."[10]

If Workforce 2000's and Civil Service 2000's predictions are true, they have particular importance for the federal government as an employer. A number of studies done by GAO and others have clearly shown that the government has had difficulties in recruiting and retaining quality employees and that these problems posed a major risk of reducing the quality of government services and programs.[11] Further recruitment and

[8]See, for example, Commission on Workforce Quality and Labor Market Efficiency, Investing in People: A Strategy to Address America's Workforce Crisis (Washington, D.C.: U.S. Department of Labor, 1989); Louis S. Richman, "The Coming World Labor Shortage," Fortune, 121 (Apr. 9, 1990), pp. 70-75; Kirk Victor, "Help Wanted Badly," National Journal, 21 (Mar. 25, 1989), pp. 730-734; Lynne F. McGee, "Innovative Labor Shortage Solutions," Personnel Administrator, 34 (Dec. 1989), pp. 56-60; William H. Miller, "A Feeble Response," Industry Week, 239 (Aug. 20, 1990), p. 34.

[9]Kevin R. Hopkins, Susan L. Nestleroth, and Clint Bolick, Help Wanted: How Companies Can Survive and Thrive in the Coming Worker Shortage (New York: McGraw Hill, Inc., 1991), p. 14.

[10]Dave Jensen, "What's All This About a Labor Shortage," Management Review, 80 (June 1991), p. 44.

[11]See, for example, Recruitment and Retention: Inadequate Federal Pay Cited as Primary Problem by Agency Officials, (GAO/GGD-90-117, Sept. 11, 1990); Report and Recommendations of the National Commission on the Public Service, Committee on Post Office and Civil Service, U.S. House of Representatives, (May 2, 1989); Charles Levine and Rosslyn S. Kleeman, The Quiet Crises of the Civil Service: The Federal Personnel System at the Crossroads, (Washington, D.C.: National Academy of Public Administration, Dec. 1986).

retention difficulties brought about by the developments chronicled in the two reports could signal a need for even greater attention to improving the competitiveness of federal employment programs.

Our past work also indicates that the federal government generally does not do a very good job of preparing for workforce changes, or of workforce planning in general.[12] The President's Council on Management Improvement (PCMI) has reached a similar conclusion.[13] Insufficient workforce planning can hamper the delivery of essential services to the American people by contributing to staff shortages and increasing program costs and delays.

While federal decisionmakers need to be concerned about changing conditions in the nation's workforce as they devise strategies and programs to recruit, develop, and retain a qualified federal workforce in the years to come, it is also important not to spend time and effort on changes that may not occur. If labor economists and other experts disagree on whether tight labor markets, skills mismatches, and demographic changes will occur, any planning and policy changes predicated on those conditions may have little practical value in the long run. As one in a series of reviews we are making of the government's preparedness to be a competitive employer in the future, this report examines the implications of Workforce 2000 and Civil Service 2000 for federal workforce planners.

Objectives, Scope, and Methodology

Our objective was to examine the predictions in Workforce 2000 and Civil Service 2000 with regard to work and workers at the beginning of the next century and identify the elements of those predictions that appear to be the most relevant to federal employment policy decisionmaking.

We concentrated on seeking answers to the following questions regarding changes in the world of work in general and the federal workforce in particular:

- Do labor economists and other experts agree that there will be widespread tight labor markets, skills gaps, and demographic changes in the labor force by the year 2000?

[12]See, for example, Managing Human Resources: Greater OPM Leadership Needed to Address Critical Challenges (GAO/GGD-89-19, Jan. 19, 1989); U.S. Department of Agriculture: Need for Improved Workforce Planning (GAO/RCED-90-97, Mar. 6, 1990).

[13]Applying the Best to Government: Improving the Management of Human Resources in the Federal Government Through a Private-Public Partnership, vol. II, sponsored by PCMI (1987).

- Do the federal and nonfederal workforces differ with respect to any of these conditions believed likely to occur?
- Are there differences within the federal workforce with respect to any of these conditions believed likely to occur?
- What are the implications of these findings for federal workforce planning?

In addressing these questions, we reviewed published demographic data on the federal workforce and the national civilian labor force and discussed the different Workforce 2000 and Civil Service 2000 projections with officials at OPM and the Department of Labor's Bureau of Labor Statistics (BLS). We also reviewed numerous academic articles and research reports on these topics by various scholars and organizations.

Because the published demographic data were too limited to allow detailed historical comparison of federal/nonfederal workforce characteristics, we obtained unpublished data from BLS and OPM that covered each even-numbered year from 1976 through 1990. The nonfederal workforce data came from the Current Population Survey (CPS), and the federal workforce data were drawn from OPM's Central Personnel Data File (CPDF).[14] Appendix I describes the CPS and CPDF data sources in detail and presents a more complete statement of our objectives, scope, and methodology.

Our methodology had certain limitations. We did not attempt to review every published article and report that addressed Workforce 2000's and Civil Service 2000's conclusions. However, we reviewed a sufficient number to become convinced that we had captured the common themes in the literature regarding the possibility of future labor shortages and skills mismatches. Moreover, we did not independently verify the BLS or OPM data used in our analysis. However, we believe the data presented in this report represent the best available information on demographic trends in the federal and nonfederal workforces.

Although we did not formally obtain agency comments on this report, we discussed its contents with officials from BLS and OPM. They made certain technical suggestions as to the presentation of the information. We incorporated those suggestions in the report where appropriate. We did this study between October 1990 and November 1991 in accordance with generally accepted government auditing standards.

[14]The CPS is done by the Bureau of the Census for BLS. This monthly survey of the population is conducted using a scientifically selected sample of households, representative of the civilian noninstitutional population of the United States. The CPDF contains data submitted to OPM by federal agencies on their respective workforces.

Some Experts Question Predictions of Labor Shortages and Skills Mismatches, but Demographic Changes Have Occurred and Are Expected to Continue

Conditions and changes in the national labor force are of direct relevance to federal policymakers and workforce planners because that labor force is the pool of workers from which new federal employees will be drawn and to which existing federal workers can be lost. If labor economists and other experts agree that Workforce 2000's predictions of labor shortages, skills gaps, and demographic changes are valid, federal policymakers and workforce planners should prepare for these changes. This chapter examines the Workforce 2000 predictions concerning national labor force conditions at the turn of the next century and determines whether experts agree that these predictions are reasonable.

Questions Raised Regarding Predictions of Tight Labor Markets and Skills Mismatches

Since the publication of Workforce 2000, numerous authors have used its conclusions to warn employers of coming workforce conditions and to promote the adoption of new human resource policies. Most appear not to have questioned the report's underlying assumptions. Other authors, though, have criticized the report's premises and findings. The authors of one such article said that the report understated the severity of future skills gaps because it accepted BLS projections about the occupational employment distribution of the future.[1] The authors concluded that the BLS methodology understated the rise in skill levels that will be demanded in the labor market by the year 2000. Thus, they predicted that "the forecasted shortage of skilled and educated workers is probably more serious than projected in Workforce 2000."[2]

However, almost all of the critical articles we reviewed maintained that Workforce 2000 overstated the case. Similarly, experts we interviewed questioned whether the widespread labor shortages and skills gaps predicted in Workforce 2000 would occur by the turn of the next century. BLS officials told us that, except in very unusual circumstances such as wartime, labor shortages are usually limited to certain occupations, industries, and geographic areas or for short-term periods.[3] They said

[1]John H. Bishop and Shani Carter, "The Worsening Shortage of College Graduate Workers," Working Paper #90-15, Center for Advanced Human Resource Studies, New York State School of Industrial and Labor Relations, Cornell University, October 3, 1990, draft.

[2]Bishop and Carter, "The Worsening Shortage of College Graduate Workers," p. 1 of executive summary. Using their own analysis of employment trends, Bishop and Carter estimate that professional, technical, and managerial jobs will account for 70 percent of employment growth through the year 2000, compared with the BLS estimate of 44.5 percent.

[3]The BLS officials said that more pronounced labor shortages may develop after 2005-2010 when employees born during the baby boom begin to retire in large numbers and younger age cohorts are insufficient to replace them. However, they noted that little is being done now to prepare for these long-range changes, since most private sector employers' workforce plans do not extend that far into the future.

these kinds of labor shortages are very difficult to predict ahead of time, since (1) such shortages have both a supply and a demand component, each of which is affected by a variety of factors, and (2) the kind of data needed to forecast such conditions are generally not available.

BLS officials agreed with Workforce 2000 that the supply of labor has been slowing. However, they also pointed out that the demand for labor has decreased as well. With both supply and demand diminishing, widespread labor shortages predicted in Workforce 2000 are, in their opinion, unlikely to occur.

The BLS officials' views echoed a 1989 article by Jon Sargent, a BLS labor economist.[4] Sargent concluded that

> (t)he limited information available does not support any likelihood of a general shortfall of workers through the year 2000 nor suggest widespread shortages of any broad demographic or educational group. Labor shortages that arise will occur primarily because the special skills and location of workers do not precisely match those in demand. Labor shortages, as in the past, are likely to be confined to a relatively small number of occupations or to limited areas of the country experiencing spurts of economic growth that exhaust the immediately available supply of labor.[5]

In a comprehensive challenge to Workforce 2000's conclusions regarding labor shortages and skills mismatches, an Economic Policy Institute (EPI) report also concluded that these conditions are unlikely to happen.[6] Noting that the labor shortage/skills gap scenario in Workforce 2000 has become "conventional wisdom," the report went on to say that

> this account of the near future is, in most respects, either wrong or misleading—wrong in that key "facts" are contradicted by available data, misleading in that key predictions are more wishful thinking than logical extrapolations of existing trends.[7]

The EPI report disputed Workforce 2000's conclusion that slower labor force growth will lead to tighter labor markets on several grounds. First, the report noted that changes in immigration levels, which are very difficult

[4]Jon Sargent, "Labor Shortages: Menace or Mirage," Occupational Outlook Quarterly, Winter 1988, pp. 27-33.

[5]Sargent, "Labor Shortages: Menace or Mirage," p. 33. For a similar presentation on this point, see Roger L. Conner, "Answering the Demo-Doomsayers: Five Myths About America's Demographic Future," The Brookings Review (Fall 1989), p. 39.

[6]Lawrence Mishel and Ruy A. Teixeira, The Myth of the Coming Labor Shortage: Jobs, Skills, and Incomes of America's Workforce 2000, The Economic Policy Institute (1991).

[7]Mishel and Teixeira, The Myth of the Coming Labor Shortage, pp. 5-6.

to assess and predict, can have considerable effects on the size of the labor force.[8] Second, the authors pointed out that if the labor force grows more slowly, the demand for goods and services should also slow down, thereby helping to keep the supply and demand components of the labor market in balance. Third, the authors noted that whereas tightening labor markets are generally indicated by decreasing unemployment rates, the United Kingdom, France, Germany, and Italy had slow labor force growth rates during the 1980s yet each experienced increasing unemployment during this period. They pointed out that

> while slow labor force growth could conceivably be associated with tight labor markets, it is by no means a logical consequence of such slow growth. Tight labor markets, in reality, depend upon a number of different factors (for example, productivity) with no one-to-one relationship to labor force growth rates.[9]

The EPI report also challenged Workforce 2000's conclusions about a growing mismatch between workers' skills and job requirements. First, the report argued that skill levels required will rise more slowly than Workforce 2000 predicted. In fact, the authors said the increase in skill levels resulting from a changing mix of occupations would be less than what occurred in the 13 years that preceded the Workforce 2000 report.[10] Second, the EPI study argued that Workforce 2000 overstated the proportion of new workforce entrants who will be disadvantaged workers with limited skills. While agreeing that many minority entrants to the workforce have educational deficits that should be addressed, the authors noted that relatively high-skilled White, non-Hispanic men and women will still constitute two-thirds of all new entrants to the workforce from 1988 to 2000.[11] The EPI report concluded that, although a need exists to upgrade the education and training of all workers, conclusions about a future skills crisis resulting from demographic changes are misleading.

[8]The unpredictability of immigration patterns is illustrated by the immigration reform act, which went into effect on October 1, 1991, and thus could not have been envisioned by the 1988 Workforce 2000 study. The new immigration law increased the overall number of immigration visas granted each year from about 500,000 to 700,000 through 1994 and 675,000 annually thereafter. Moreover, the law increased the number of visas allocated to persons with particular job skills from 54,000 to 140,000 a year.

[9]Mishel and Teixeira, The Myth of the Coming Labor Shortage, pp. 46-47.

[10]The report agreed with Workforce 2000 that the most highly skilled occupations will also be the fastest growing (which Civil Service 2000 also highlighted in view of the higher skill levels required by federal jobs) but said (1) these jobs will comprise a relatively small portion of changes to the job structure of the economy as a whole and (2) these increases will be partially offset by a shift toward more lower skilled jobs in the rapidly growing service occupations.

[11]A more detailed critique of Workforce 2000's conclusions about how quickly and how much the composition of the workforce is changing will be presented under the discussion of changing workforce composition later in this chapter.

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A 1989 report by the Congressional Research Service (CRS) also questioned the skills mismatch scenario set forth in Workforce 2000.[12] The CRS report noted that the scenario did not take into account the educational progress Blacks and Hispanics have made and overlooked the fact that the fast growing service occupations require little schooling. The report also said that the shift in the occupational structure toward jobs requiring higher skill levels is projected to be "quite slow."

Similarly, an article in American Demographics argued that concerns about labor shortages caused by a lack of technical workers may be exaggerated.[13] The author noted that

> (t)echnical jobs are growing twice as fast as employment in general, but they will make up only 4 percent of all jobs by 2000, versus 3 percent in 1988. More than technical workers, this country needs service workers—many of whom won't need a postsecondary education to do their jobs . . . . Three of the four occupations expected to offer the greatest number of jobs in the coming years—retail salespeople, janitors and maids, waiters and waitresses—don't even require a high school diploma.[14]

Another author also questioned whether technological change will lead to widespread skill shortages.[15] He noted that new technology will lead to "deskilling" in some occupations and predicted little overall change in skill requirements by the year 2000 resulting from changes in the occupational employment distribution. The author also said that Workforce 2000's focus on the increasing skill requirements of new jobs (i.e., jobs projected to be created between 1986 and 2000) was misleading in that it failed to recognize the relatively lower skill requirements of jobs in the year 2000 that will not be new. He concluded that "there is no evidence to suggest widespread skill shortages due to rapidly altering skill requirements in the 1990's."

In its 1990 study on work and productivity in America, the Commission on the Skills of the American Workforce also questioned whether there is a skills shortage and whether the skills problems in the future will be as severe as Workforce 2000 portrayed.[16] After visiting hundreds of

[12]Linda LeGrande, Labor Shortages: Reality or Myth, CRS (Aug. 21, 1989).

[13]Diane Crispell, "Workers in 2000," American Demographics, 12 (Mar. 1990), pp. 36, 38-40.

[14]Crispell, "Workers in 2000," pp. 39-40.

[15]Stephen L. Mangum, "Impending Skill Shortages: Where Is the Crisis?" Challenge (Sept.-Oct. 1990), pp. 46-52.

[16]Commission on the Skills of the American Workforce, America's Choice: High Skills or Low Wages! (Rochester, New York: National Center on Education and the Economy, 1990).

American firms in all sectors of the economy, the Commission reported that only 5 percent of employers it contacted believed that education and skill requirements were increasing significantly. Only 15 percent of the employers said they were having difficulty finding employees with appropriate occupational skills. In these instances, the shortages were generally in chronically underpaid "women's" occupations and traditional craft trades. Although more than 80 percent of the employers complained to the Commission about a "skills" shortage, what they were referring to was a difficulty finding employees with a good work ethic and appropriate social behavior (i.e., being "reliable" and having "a good attitude"). They were rarely concerned about literacy and math skills. As for the future, the Commission noted that the only major skill challenge on the horizon was the greater number of managerial and professional jobs that will require a college degree. However, it also noted that

> (a)lthough the demand for college graduates will probably rise over the decade, this will not dramatically alter the character of our labor market, nor create a crisis. Four-year college graduates have been increasing as a percentage of our workforce since 1940—from six percent in that year to 11 percent in 1959, to 22 percent in 1987. A continuation of this trend will bring us to the 30 percent that is likely to be required by the year 2000.[17]

Federal Labor Supply and Skill Requirements Also Difficult to Predict

If labor shortages and skills gaps in the national labor market are difficult or even impossible to predict, what does this portend for federal labor market forecasts? Officials we spoke with at BLS and OPM said that predictions of a tight labor supply and skills mismatches for federal jobs in the year 2000 are also extremely difficult. They noted that predicting federal labor supply is, to some degree, contingent upon being able to predict conditions in the private sector because federal and private sector labor markets are interdependent. A slowdown of hiring in the private sector often has a salutary effect on federal recruitment and retention, particularly within a given geographic area.[18]

OPM and BLS officials also said federal workforce planning can be more difficult than workforce planning in the private sector. They noted that the

[17]Commission on the Skills of the American Workforce, America's Choice, p. 28.

[18]For example, in our September 1990 study of federal recruitment and retention we reported that economic difficulties in San Antonio encouraged applicants there to accept federal jobs and employees to stay with the federal government. We also found that hiring and retention difficulties for federal agencies in other areas were eased when nonfederal jobs were scarce. One official in Chicago said "(r)ecessions do wonders for (federal) recruitment." (See Recruitment and Retention: Inadequate Federal Pay Cited as Primary Problem by Agency Officials (GAO/GGD-90-117, Sept. 11, 1990), pp. 35-36. This dynamic also operates in particular occupations. Cutbacks on Wall Street, for example, resulted in some federal agencies being flooded with job applications from financial experts and economists.

influence of federal policy developments on the attractiveness of federal jobs is difficult to predict. For example, the November 1990 enactment of the Federal Employees Pay Comparability Act of 1990 (FEPCA) may dramatically affect the federal government's ability to compete for employees in different areas of the country.[19] Beginning in 1994, FEPCA provides for differing pay adjustments by locality to narrow federal/nonfederal pay gaps in areas where nonfederal salaries significantly outpace average federal salaries. It also allows agencies to pay candidates and employees recruitment and retention bonuses and permits greater flexibility in pay setting. Making federal salaries more competitive by locality and allowing such incentives and flexibilities can significantly improve the attractiveness of federal jobs, thereby lessening the possibility of a generalized shortage of applicants for federal jobs.[20]

Unexpected political developments can also affect federal hiring. For example, the government has often experienced difficulty recruiting and keeping quality scientists and engineers. However, with anticipated cutbacks in U.S. defense spending brought about by the changes in eastern Europe and the Soviet Union, one OPM official we interviewed observed that fewer defense contracts could lead scientists and engineers to apply for federal jobs in large numbers. Relatedly, a BLS official told us that cuts in defense spending could lessen the federal government's demand for engineers. Such developments can alleviate or temporarily end any federal recruitment and retention difficulties in these fields.[21]

Demographic Predictions Are Valid but Not Always Accurately Presented

One basic aspect of Workforce 2000 on which all experts agree is the changing demographic composition of the civilian labor force. As Workforce 2000 pointed out, the civilian labor force has become increasingly composed of women, minorities, and older workers, and those trends are expected to continue into the next century.[22] Civil Service 2000 predicted the same trends for the federal labor force.

[19]P.L. 101-509, enacted November 5, 1990.

[20]We discussed some of these issues with Arnold Packer, coauthor of the Workforce 2000 report. He said that locality pay could make the federal government a more competitive employer in high-cost areas, and that pay reform could change the demographics of the federal workforce.

[21]Changes in defense spending can also affect certain nonfederal industries and occupations. See Norman C. Saunders, "Defense Spending in the 1990's: The Effect of Deeper Cuts," Monthly Labor Review, (Oct. 1990), pp. 3-15.

[22]See Johnston, Workforce 2000, pp. 70-91, and Johnston and others, Civil Service 2000, pp. 17-27.

Changes in the Gender and Race/National Origin Composition of the Civilian Labor Force

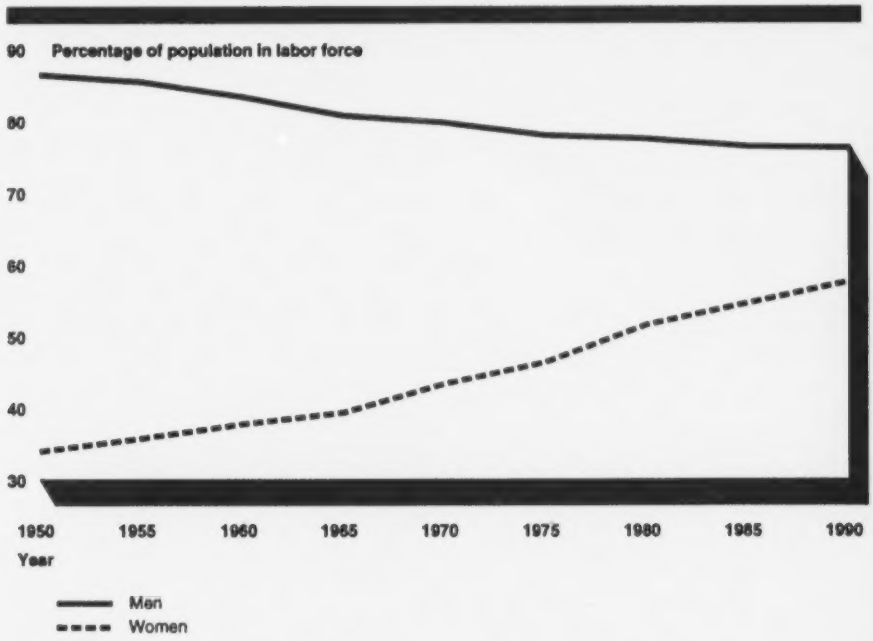
Since 1950, the demographic composition of the civilian labor force has changed markedly.[23] The most dramatic and important of these changes has been a huge increase in the numbers and proportion of women in the labor force. During the past 4 decades, the female civilian labor force increased by nearly a million workers each year. By 1990, nearly 57 million women were working or looking for work—more than a 200-percent increase since 1950. The number of men in the labor force increased by about 55 percent between 1950 and 1990.

The changes and differences in men's and women's presence in the labor force are even more obvious when looking at civilian labor force participation rates. (See fig. 2.1.) In 1950, only about one-third of all women were in the civilian labor force; by 1990, the female labor force participation rate had increased to nearly 60 percent. The male labor force participation rate, on the other hand, fell from 86.4 percent in 1950 to 76.1 percent in 1990. BLS officials predicted a continuation of these trends, with the female participation rate reaching as high as 66.1 percent and the male participation rate falling as low as 72.9 percent by the year 2005.[24]

[23]The civilian labor force includes persons working and those actively looking for work. Unless otherwise noted, the labor force is based on the civilian noninstitutional population age 16 and over.

[24]There had been some concern expressed that women's labor force participation rates were falling somewhat, particularly among women in the 25-to-34 age group. However, BLS officials believed that a 1.2-percentage point decline in these women's participation rate between 1990 and 1991 was due to the recession, not lower labor force attachment, because men's participation rate also fell by 1.2 percentage points for that age group.

Figure 2.1: Women's Labor Force Participation Rate Increased Between 1950 and 1990, While Men's Participation Rate Fell

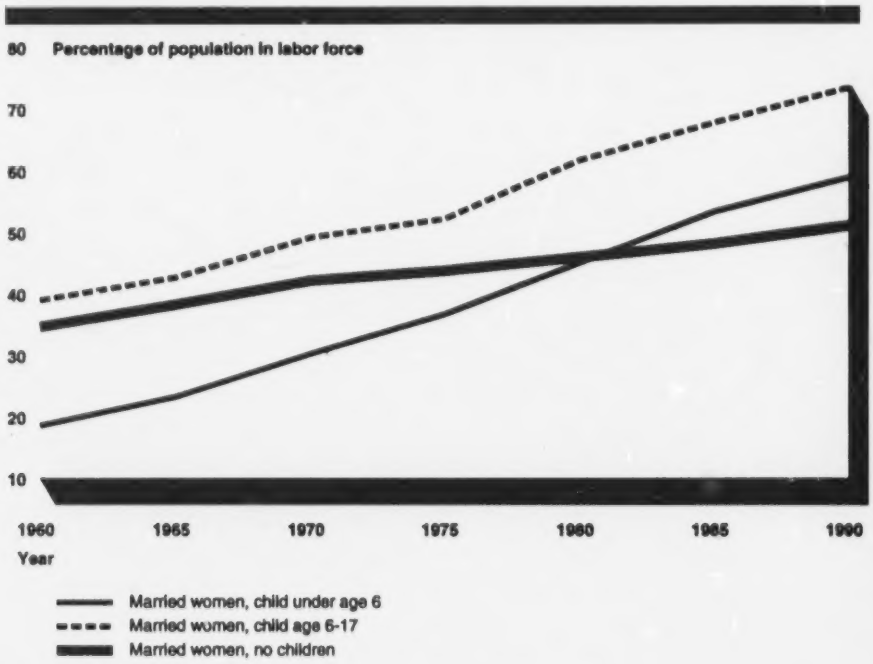


Source: BLS.

The most dramatic changes in female labor force participation rates in recent decades occurred among married women with children. (See fig. 2.2.) In 1960 (the earliest date for which such data are available), only 18.6 percent of married women with a spouse present and children under 6 years old were in the civilian labor force. By 1990, nearly 60 percent of such women were in the labor force. The participation rate for married women with children ages 6 to 17 increased from 39 percent in 1960 to nearly 75 percent in 1990. In fact, by 1990 the participation rates of both these groups of women with children exceeded the participation rate of married women with no children (whose participation rate was 51.1 percent in 1990).[25]

[25]Although single women with children's labor force participation rates also increased during this period, the increase was not as pronounced as for married women with children. For example, participation rates for both single and married women with children under age 6 were about 37 percent in 1975. By 1988, married women's participation rate had risen to over 57 percent. Single women's rate was less than 45 percent in 1988.

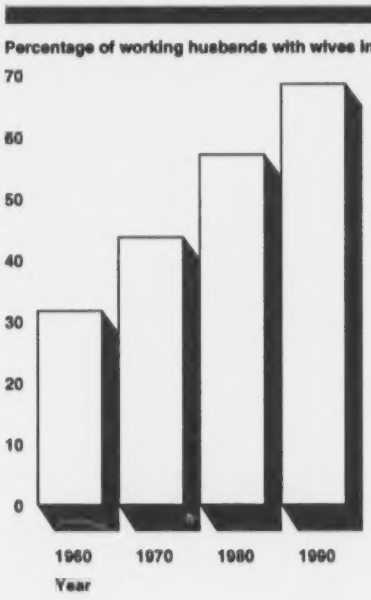
Figure 2.2: Labor Force Participation Rates of Married Women With Children Increased Dramatically Between 1960 and 1990



Source: BLS.

Concurrent with the entry of women into the labor force has been a dramatic increase in the proportion of families in which both husbands and wives are in the labor force. For example, in 1960 only 31.6 percent of working husbands' wives were in the labor force. By 1990, that percentage had more than doubled to nearly 70 percent. (See fig. 2.3.)

Figure 2.3: Percentage of Working Husbands With Wives in the Labor Force More Than Doubled Between 1960 and 1990



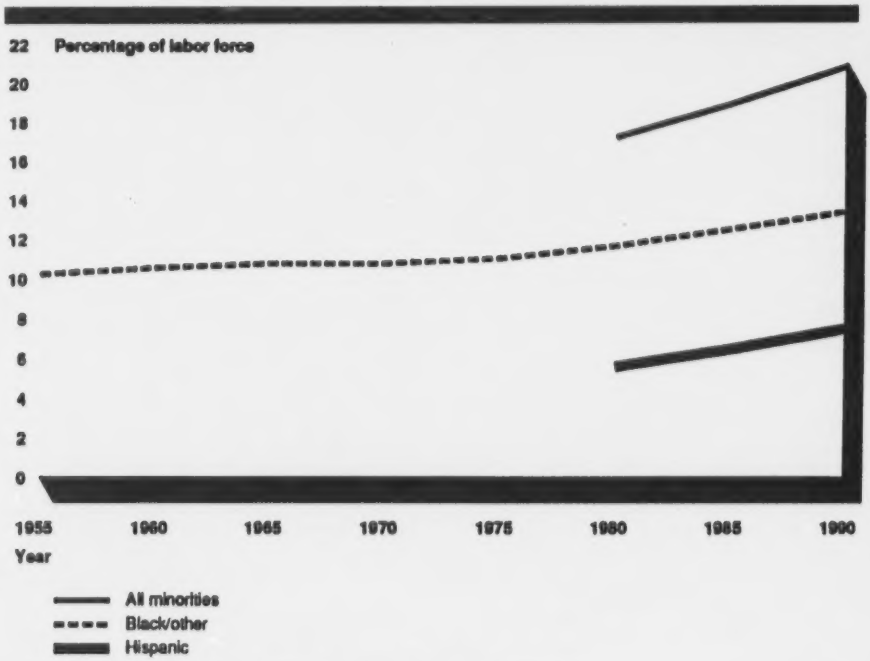
Source: BLS.

Minority representation in the civilian labor force increased slowly until about 1970, but in subsequent years minority representation has accelerated. As figure 2.4 shows, Blacks and other races (Native Americans, Asians, Pacific Islanders, and others) increased their share of the civilian labor force by only about one-half of 1 percent between 1955 and 1970.[26] However, from 1970 to 1980 the percentage of the labor force made up of Blacks and other races increased almost a full percentage point, and from 1980 to 1990, their labor force share accelerated upward by almost 2 percent, to 13.4 percent. Hispanics and all minorities (the combination of Hispanics and the Black/other racial category) registered similar gains from 1980 to 1990.[27]

[26]This "Black/other" category did not include Hispanics.

[27]These changes in the labor force reflect changes in the population as a whole. Recent census data indicate that the racial composition of the American population changed more dramatically from 1980 to 1990 than at any other time in the 20th century. Furthermore, immigrants made up more than one-third of the nation's growth in the 1980s, the strongest contribution to population change since the early 1900s.

Figure 2.4: Minority Representation in the Labor Force Has Increased Since 1980



Note: No data were available for Hispanics or all minorities before 1980.

Source: BLS.

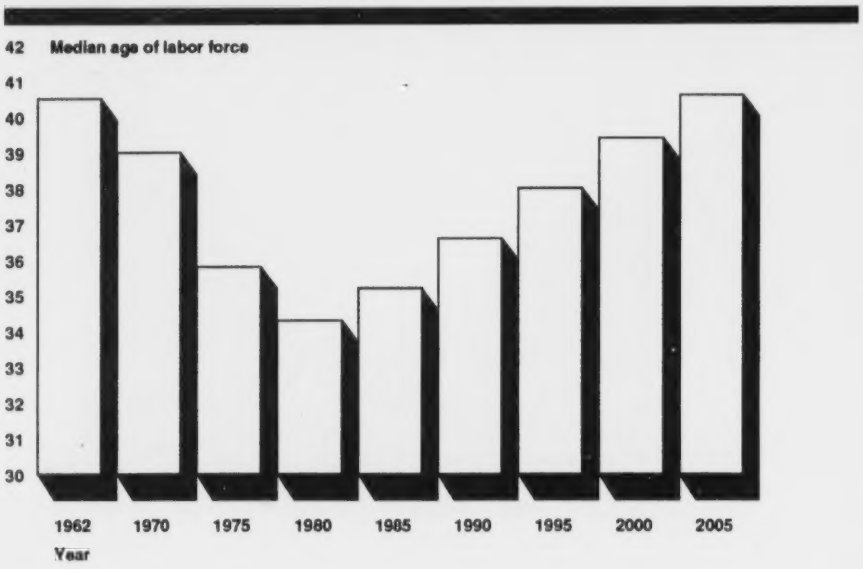
BLS officials predicted a continuation of this trend, with minorities representing 27 percent of the labor force by the year 2005.

The Aging of the Labor Force Is an Emerging Issue

Whereas the increasing numbers of women and minorities in the labor force have transformed the workplace in the latter half of the 20th century, the aging of the labor force is a trend that may have an equally profound impact on the world of work in the first half of the 21st century.

In a sense, the aging of the workforce is nothing new. As figure 2.5 shows, after declining from 40.5 in 1962 to 34.3 in 1980, the median age of the civilian labor force rose to 36.6 in 1990 and is expected to reach 40.6 by the year 2005. These changes are largely attributable to the "middle-aging" of the baby boom generation and the declining percentage of young workers (age 16 to 24) in the labor force.

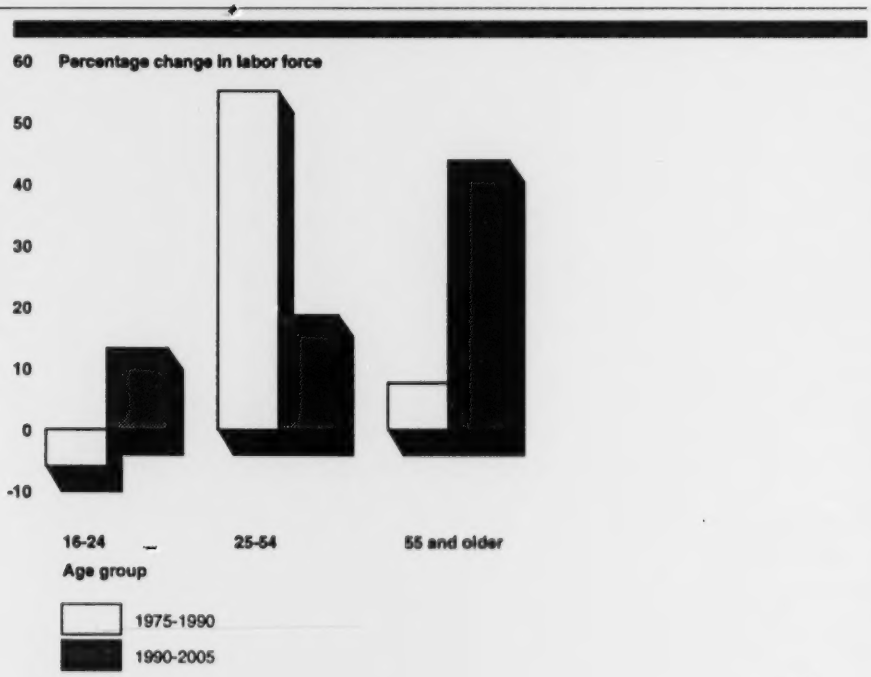
Figure 2.5: Median Age of the Labor Force Fell From 1962 to 1980 but Has Risen Since 1980



Source: BLS.

Figure 2.6 shows the percentage change in the number of workers by age category between 1975 and 1990 and between 1990 and 2005. The figure clearly illustrates the movement of the baby-boom generation through the age categories. From 1975 to 1990, the greatest increases were in the 25-to-54 age group. From 1990 to 2005, the greatest increases are expected in the 55-and-older age group.

Figure 2.6: The 25-to-54 Age Group Grew Most Between 1975 and 1990, Whereas the 55-and-Older Age Group Is Expected to Grow Most Between 1990 and 2005



Source: BLS.

These changes in age composition are not expected to place severe stresses on employment systems in the near term.[28] However, the longer term implications are of more concern. The first members of the baby-boom generation will reach age 55 in the year 2001, with the last of the baby boomers reaching 55 by 2019. Because of the absolute size of this age cohort (76 million people) and the "birth dearth" (i.e., the comparatively lower birth rates) that followed the baby boom era, a greater proportion of the civilian labor force will be eligible to retire during this period than at any point in American history.

The rate at which the baby boom generation will leave the civilian labor force is contingent upon both their attaining retirement eligibility and their desire to leave the labor force. If older members of the population decide

[28]In fact, as Workforce 2000 points out, the middle-aging of the workforce may have a number of positive effects through the 1990s. An older, experienced workforce should improve productivity, the national savings rate may rise, and the economic dependency ratio (the proportion of the population not in the labor force compared with those in the labor force) will decline.

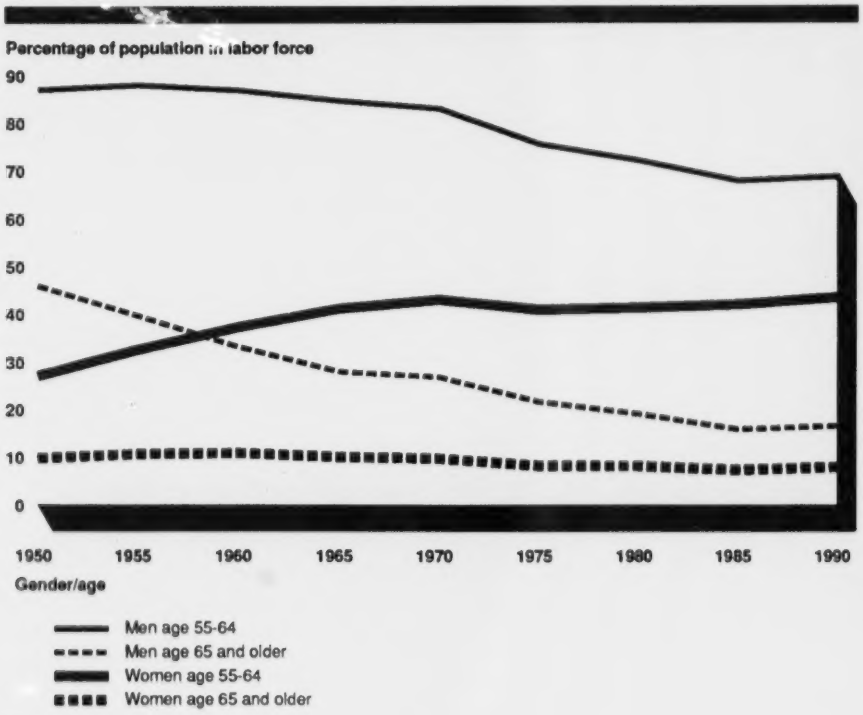
to stay employed longer, then the effects of aging on the size of the labor force will be mitigated somewhat.

However, the labor force participation rate of older workers is trending in the opposite direction. While it is impossible to predict the work behavior of baby boomers, historical trends in labor force participation of older Americans suggest that many members of this generation will leave the labor force earlier than their predecessors. As figure 2.7 shows, nearly half of American men age 65 and older were still in the labor force in 1950; by 1990 their labor force participation rate was down to 15.7 percent. The participation rate for men age 55 to 64 also fell during this period, from nearly 87 percent in 1950 to less than 69 percent in 1990.[29] The participation rate for women age 55 to 64 rose from 1950 (27 percent) to 1970 (43 percent). Since then, though, their participation rate has changed very little. Older women (age 65 and older) had a continuously low labor force participation rate throughout the 1950 to 1990 period.[30]

[29]BLS expects the labor force participation rate for men in these age groups to remain relatively constant between 1990 and 2005.

[30]BLS expects the labor force participation rate for women age 55 to 64 to go up somewhat between 1990 and 2005. Participation rates for women age 65 and older are expected to remain low during this period.

Figure 2.7: Labor Force Participation Rates for Older Men Fell Between 1950 and 1990, While Participation Rates for Older Women Rose Slightly



Source: BLS.

Thus, the stage is set for what may be the most significant change in civilian labor force composition since the entrance of women over the past 4 decades. With a higher-than-ever percentage of the labor force potentially eligible for retirement, and with an increasing propensity of older workers to leave the labor force as soon as possible, some of the officials we interviewed said there may be the type of generalized tight labor markets predicted in Workforce 2000 by the second or third decade of the 21st century. However, they said that predicting changes that far into the future is extremely risky. Conditions could change substantially if the labor force is buttressed by a population infusion (e.g., through increased immigration) or if employers devise incentives to encourage older workers to delay their retirement plans.

Some Demographic Changes in Workforce 2000 Were Overstated

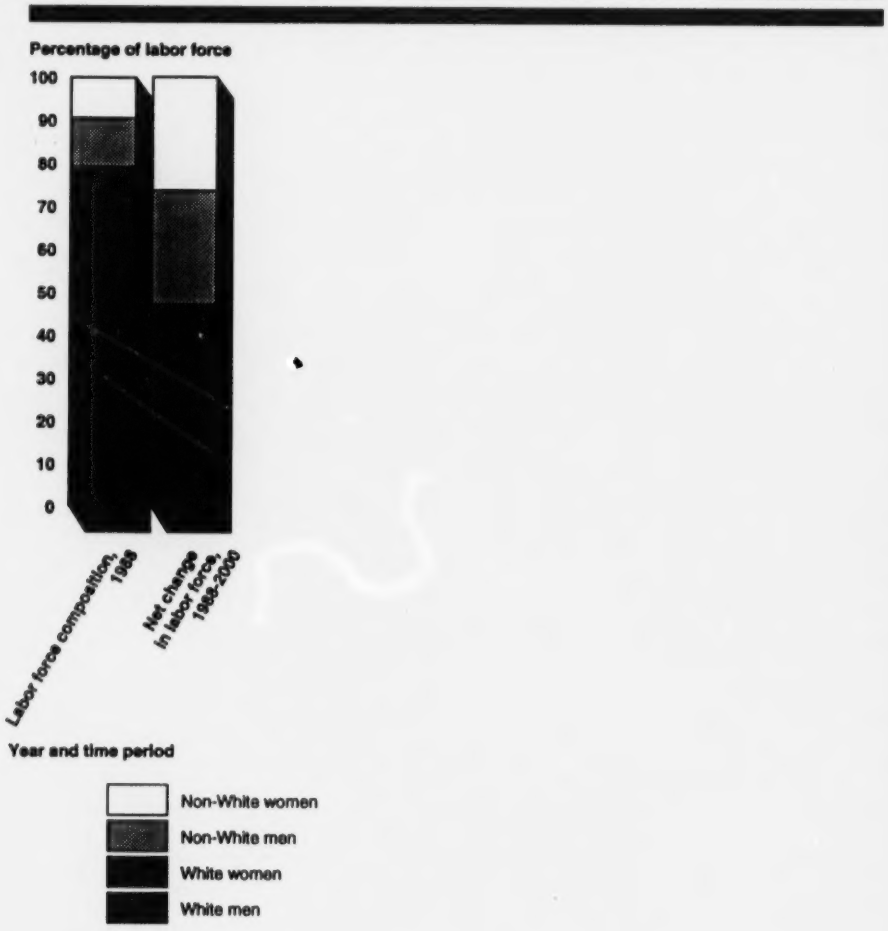
Although it is important to recognize that the demographic composition of the labor force is changing, it is also important not to overstate those changes. For example, Workforce 2000 stated in its executive summary that "(o)nly 15 percent of the new entrants to the labor force over the next 13 years will be native white males, compared to 47 percent in that category today." The executive summary also said that "(a)lmost two-thirds of the new entrants into the workforce between now and the year 2000 will be women . . ." These statistics have been repeated in dozens of publications, and are now widely accepted in the literature in this area.

Unfortunately, as the authors of Workforce 2000 now acknowledge, those statistics were in error. BLS predicts that nearly one-third (not 15 percent) of the new entrants to the labor force between 1988 and 2000 will be White males. About 52 percent (not "almost two-thirds") of the new entrants to the labor force between 1988 and 2000 are expected to be women.[31]

Similarly, Workforce 2000's presentation of the expected gender and race/national origin composition of the labor force in the year 2000 was somewhat misleading. In maintaining that the workforce in the year 2000 will be dramatically different than the labor force of 1985, the report made some inappropriate comparisons. The authors compared the composition of the labor force in 1985 with the composition of the net change in the labor force from 1985 to 2000. Figure 2.8 shows this type of comparison from 1988 to 2000.

[31]The "15 percent" and "two-thirds" figures in Workforce 2000 actually refer to the "net change" in the workforce between 1988 and 2000. Net change refers to the difference between workforce entrants and leavers.

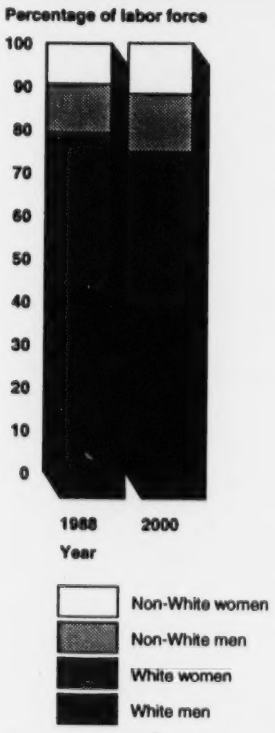
Figure 2.8: Type of Comparison Used in Workforce 2000 Between Labor Force Composition and Net Change in Labor Force



Source: BLS.

This type of comparison leads the reader to conclude that the labor force of the future will differ markedly from today's workforce. However, a comparison of the gender and race/national origin composition of the labor force at two points in time is more meaningful and presents a quite different picture. As figure 2.9 shows, BLS projections indicate that the composition of the workforce in the year 2000 will be much more similar to the composition of the workforce in 1988 than was implied in the Workforce 2000 report.

Figure 2.9: Labor Force Composition in 1988 Compared With Labor Force Composition Expected in 2000



Source: BLS.

While not as dramatic as those portrayed in Workforce 2000, these demographic changes are important and should not be ignored by the prudent employer.

Summary

Two of the central themes in Workforce 2000 and Civil Service 2000—predictions of a tight labor market and skills mismatches between jobs and the available labor supply by the turn of the century—have been questioned by labor economists and other experts. Although Workforce 2000 spoke of "demographics as destiny," these experts have questioned this premise, arguing that predictions of labor market shortages require much more information than is currently available. Taken together, these studies raise considerable questions regarding the report's predictions in these areas. In contrast, experts generally agree that the demographic characteristics of the civilian workforce in general and the federal labor

force in particular have been steadily changing and will continue to change for the foreseeable future.

Therefore, it is important to understand the dimensions of those demographic changes in order to understand what adaptations in human resource policies will be required to accommodate them and how they should be implemented. It is also important to understand how the federal and nonfederal workforces differ in these respects, as well as the degree to which the federal workforce is internally consistent across agencies and regions. Analysis of past changes and current conditions in these particular workforces can provide insights into the types of changes that may occur in the future.

Chapter 3 of this report discusses the demographic changes in the federal and nonfederal workforces between 1976 and 1990, focusing on federal/nonfederal differences and the source of the federal changes during this period. It also discusses how these demographic characteristics differ within the federal government by agency and geographic region.

Demographic Similarities and Differences Exist Between the Federal and Nonfederal Workforces and Within the Federal Workforce

Although both the federal and nonfederal workforces changed in similar ways from 1976 to 1990, the extent of those changes and the demographic composition of the two workforces differed.[1] There were also substantial differences within the federal government by agency and geographic region in several of these characteristics. Thus, in some respects, the federal government may face more pressing challenges than its nonfederal counterparts in responding to the demographic changes described in Workforce 2000 and Civil Service 2000.

Federal and Nonfederal Workforces' Similarities and Differences

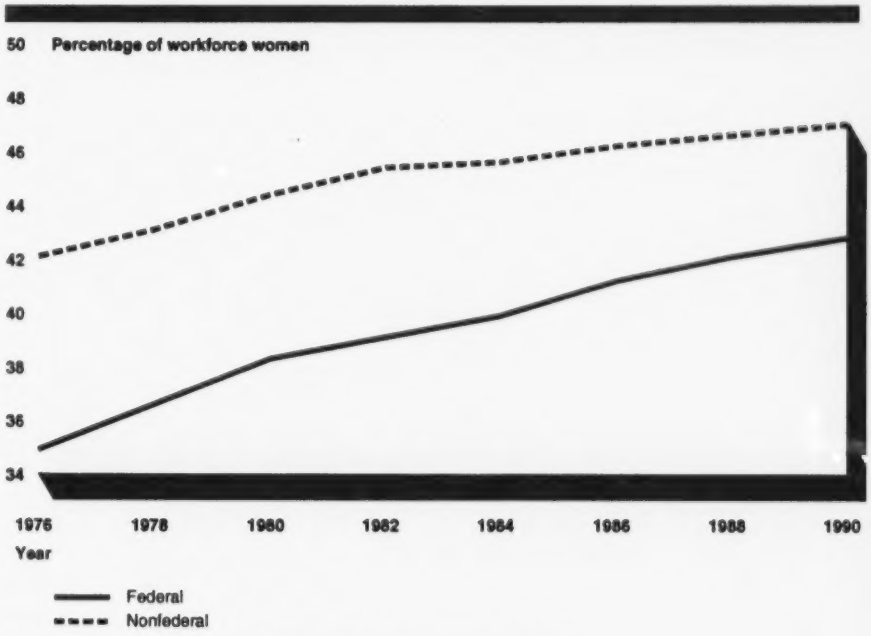
We examined changes in the gender, race/national origin, and age composition of the federal and nonfederal workforces from 1976 through 1990. We did this analysis to determine the degree to which the demographic changes and conditions in the civilian labor force as a whole (as described in ch. 2) were present in the federal workforce to a greater or lesser degree than in the nonfederal sector. The 1976 to 1990 time frame for analysis was determined by the available data; OPM officials told us that the federal data were consistently gathered only as far back as 1976, and 1990 was the most recent year federal and nonfederal data were available at the time of our study.

Nonfederal Sector More Female Based Than Federal, but Federal Changed More Between 1976 and 1990

Figure 3.1 traces the percentages of female employees in the federal and nonfederal workforces from 1976 to 1990. The nonfederal female percentage exceeded the federal female percentage throughout the period. Although the percentage of each workforce that was female increased during this period, the female percentage in the federal workforce grew at a faster pace than in the nonfederal workforce. The federal workforce went from 34.9 percent female in 1976 to 42.8 percent female in 1990; the nonfederal workforce went from 42.1 percent female to 47.0 percent female during that period. These changes narrowed the federal/nonfederal gender difference by 3 percentage points over the 14-year period. The more rapid pace of federal gender composition change is expected to continue; Civil Service 2000 predicted that female representation in the federal workforce would continue to grow faster than in the total workforce through the turn of the century.

[1]The "nonfederal workforce," as used in this report, includes employees in the private sector and state and local governments. See appendix I for a more complete description of what constitutes the nonfederal and federal sectors.

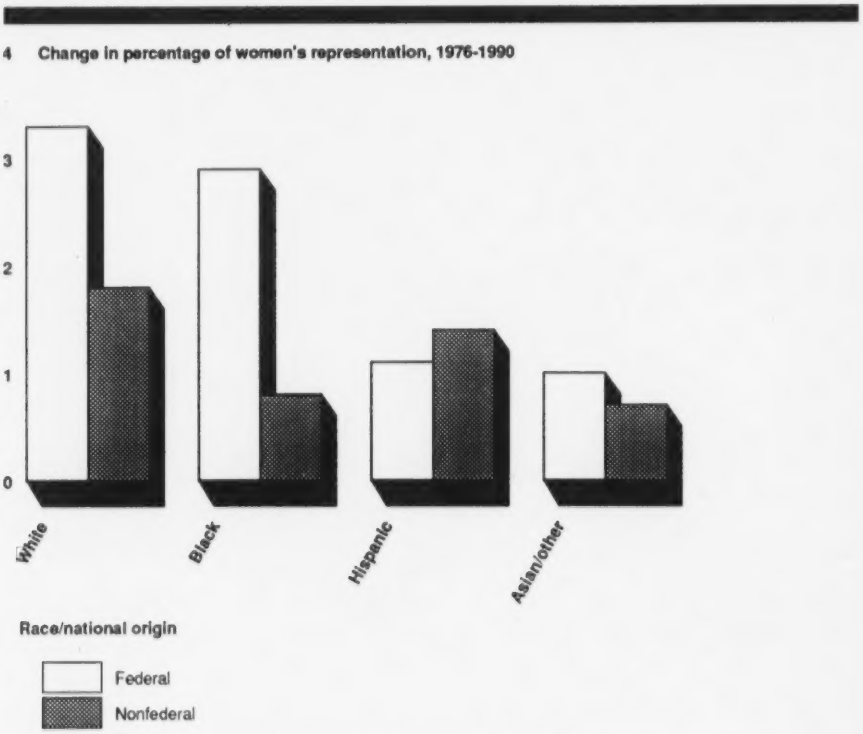
Figure 3.1: Percentage of the Workforce That Was Women Increased More in the Federal Government Than in the Nonfederal Sector Between 1976 and 1990



Sources: Federal data are from OPM; nonfederal data are from BLS.

The origins of the differing growth rates in female workforce participation in the two sectors during the 1976 to 1990 period are somewhat clearer when growth rates are analyzed by race/national origin. (See fig. 3.2.) The percentages of White, Black, and Asian/other women in the federal government all grew at faster rates during this period than in the nonfederal sector. The growth rate in the percentage of Hispanic women was slightly less in the federal sector than in the nonfederal sector.

Figure 3.2: Change in Women's Representation Between 1976 and 1990 Was More Pronounced in Federal Workforce Than in Nonfederal Workforce for All Race/National Origin Groups Except Hispanics



Sources: Federal data are from OPM; nonfederal data are from BLS.

In 1990, the gender and race/national origin composition of the federal workforce differed considerably from the nonfederal sector. (See table 3.1.) The federal workforce had a lower percentage of White females than the nonfederal workforce (28.4 percent versus 37.0 percent, respectively). Black females, on the other hand, were twice as large a segment of the federal workforce (10.2 percent) as in the nonfederal workforce (5.3 percent).

Table 3.1: Federal and Nonfederal Workforces Differed in Race/National Origin Composition Within Gender Categories in 1990

Gender and race/national origin	Percentage of workforce[a]	
	Federal	Nonfederal
Male	57.2	53.0
White	44.6	42.0
Black	6.8	5.0
Hispanic	3.0	4.4
Asian/other	2.9	1.6
Female	42.8	47.0
White	28.4	37.0
Black	10.2	5.3
Hispanic	2.0	3.2
Asian/other	2.3	1.4
Total	**100.0**	**100.0**

[a]The percentages for the individual race/national origin groups do not add to the subtotals for the gender groups because of rounding.

Sources: Federal data are from OPM; nonfederal data are from BLS.

There were also differences between the two workforces in 1990 when analyzed by gender and age. As table 3.2 shows, the federal government had a smaller percentage of women under the age of 25 and a higher percentage of men age 25 and older than the nonfederal sector.

Table 3.2: Federal and Nonfederal Workforces Differed in Age Composition Within Gender Categories in 1990

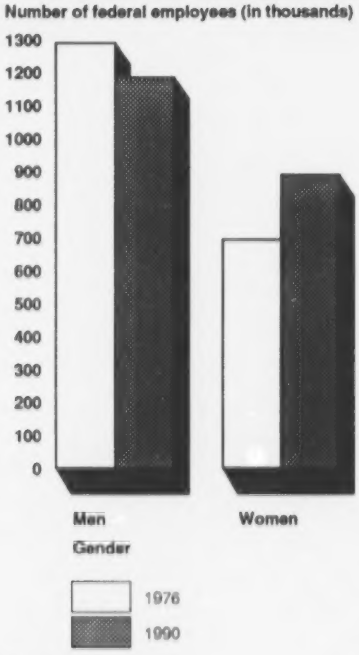
Gender and age category	Percentage of workforce	
	Federal	Nonfederal
Males	57.2	53.0
16-24	1.4	8.8
25-54	46.4	38.0
55 +	9.4	6.2
Females	42.8	47.0
16-24	2.8	8.4
25-54	34.7	33.2
55 +	5.3	5.4
Total	**100.0**	**100.0**

Sources: Federal data are from OPM; nonfederal data are from BLS.

Dramatic Changes in Federal Gender Composition Between 1976 and 1990

As shown in figure 3.1, the percentage of the federal workforce that was female increased from 35 percent in 1976 to 43 percent in 1990. Even more striking during this period were changes in the number of men and women in the federal workforce. (See fig. 3.3.) While the number of women in the federal government rose by nearly 200,000 between 1976 and 1990 (a 28-percent increase), the number of men in the federal government fell by over 100,000 (an 8-percent decrease).

Figure 3.3: Number of Men in the Federal Workforce Decreased Between 1976 and 1990, While the Number of Women Increased

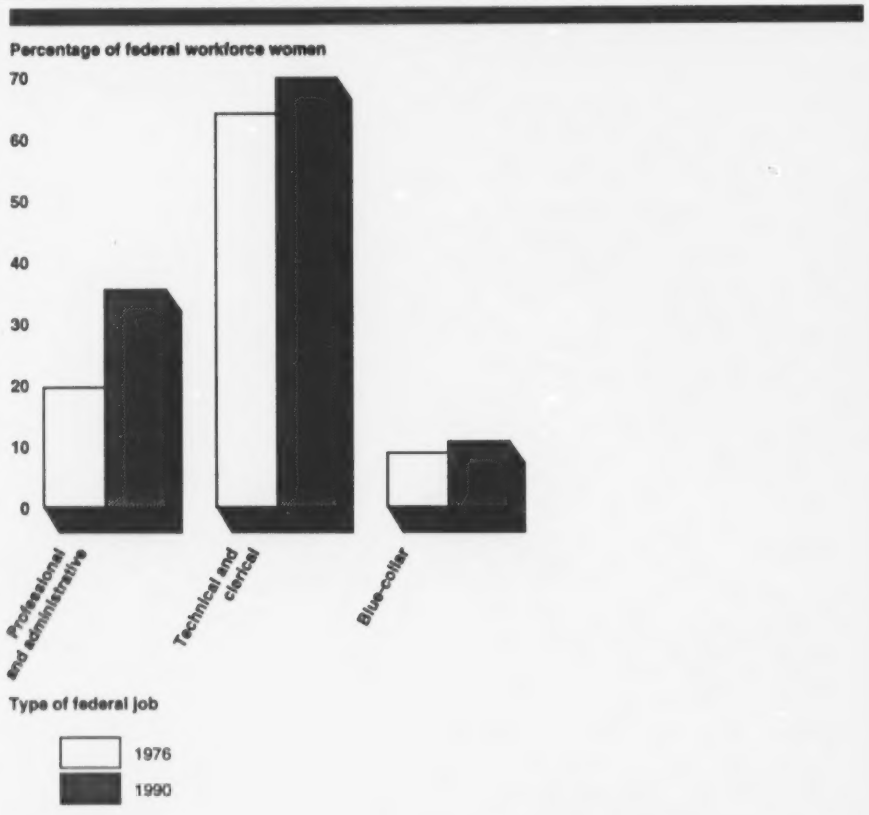


Source: OPM

Most of the changes in the gender composition of the federal workforce were in white-collar professional and administrative occupations; the percentage of women in blue-collar and white-collar technical and clerical jobs changed relatively little from 1976 to 1990. (See fig. 3.4.) In 1976, less than 20 percent of all professional and administrative employees in the

federal government were women. By 1990, over 35 percent of federal professional and administrative employees were women.[2]

Figure 3.4: Women's Representation in Federal Professional and Administrative Jobs Increased More Than in Federal Technical and Clerical or Blue-Collar Jobs Between 1976 and 1990



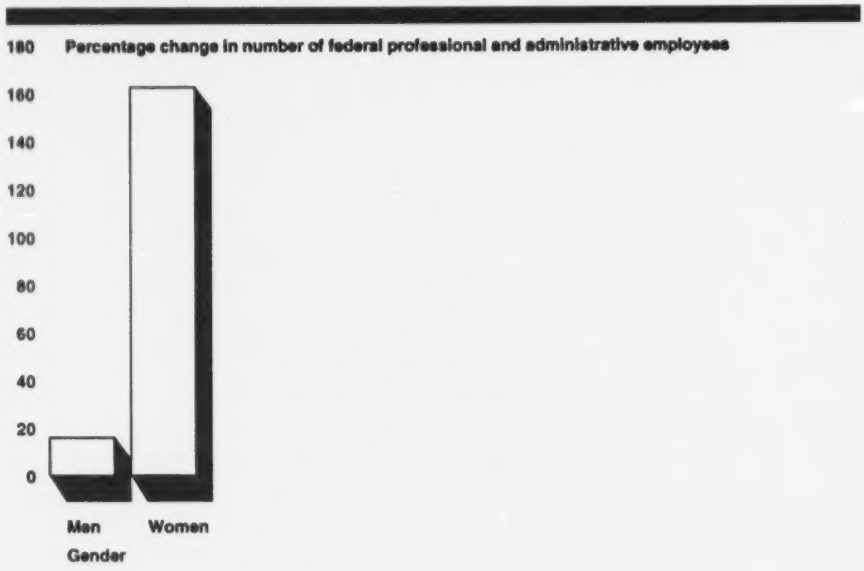
Source: OPM

The change between 1976 and 1990 in the actual number of women in federal professional and administrative jobs was pronounced in comparison to the increase for men. (See fig. 3.5.) The number of men in this category increased by less than 16 percent during this period (from about 510,000 to about 590,000), but the number of professional and

[2]A small part of this change is due to reclassification of federal occupations. For example, in 1981 the social insurace claims examining occupation was changed from a "technical" occupation to an "administrative" occupation.

administrative women in the federal government increased by 162 percent (from 123,000 to about 323,000).

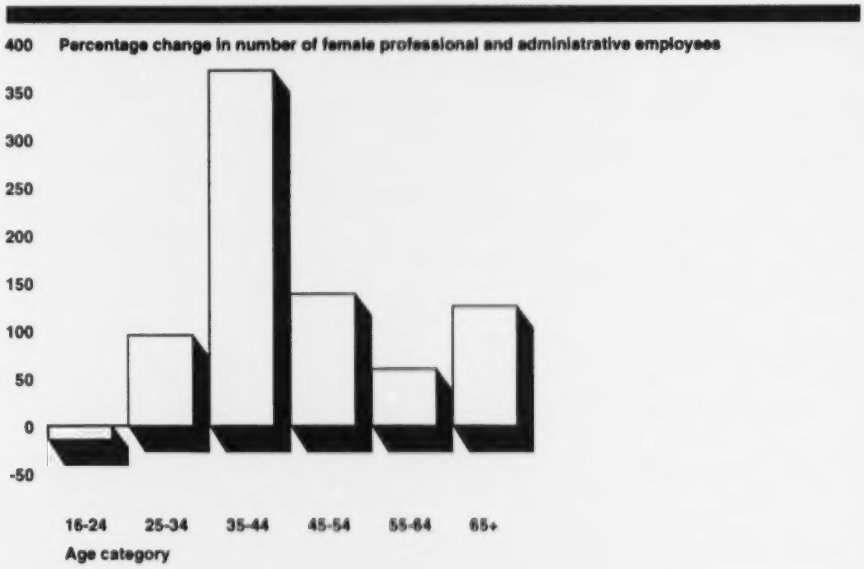
Figure 3.5: Increase in the Number of Women in Federal Professional and Administrative Jobs Far Outpaced the Increase in the Number of Men in Those Jobs Between 1976 and 1990



Source: BLS.

The changes were even more dramatic for women of child-bearing age (16-44) in federal professional and administrative occupations. The number of such women at those ages increased by over 185 percent between 1976 and 1990 (from less than 75,000 in 1976 to over 210,000 in 1990). Within that age group, the 35-to-44 age bracket changed the most, nearly quadrupling between 1976 and 1990. (See fig. 3.6.) Interestingly, the number of federal professional/administrative women in the youngest age group (16-24) decreased during this period.

Figure 3.6: Largest Change in the Number of Women in Federal Professional and Administrative Jobs Between 1976 and 1990 Was in the 35-to-44 Age Group



Source: BLS.

Despite the tremendous influx of women into the federal workforce, it is important to note that women, particularly White and Hispanic women, are still underrepresented in the federal workforce in 1990 when compared with the nonfederal labor force. Furthermore, despite some recent improvements, women are concentrated in lower-graded federal occupations. As one goes up the federal grade chart, the percentage of women goes down.[3]

Federal Workers' Spouses Are Also Working

As noted in the previous chapter, the movement of women into the civilian labor force was accompanied by an increase in dual worker families. Comparison of those data with the federal workforce is not possible, though, since the CPDF data used in this study does not contain information on the work habits of federal workers' family members. However, some insights into this issue can be drawn from the results of a survey of federal workers we recently completed.[4] The survey indicated that over 70 percent

[3]For more on this issue, see Federal Affirmative Employment: Status of Women and Minority Representation in the Federal Workforce (GAO/T-GGD-92-2, Oct. 23, 1991), and Federal Workforce: Continuing Need for Federal Affirmative Employment (GAO/GGD-92-27BR, Nov. 27, 1991).

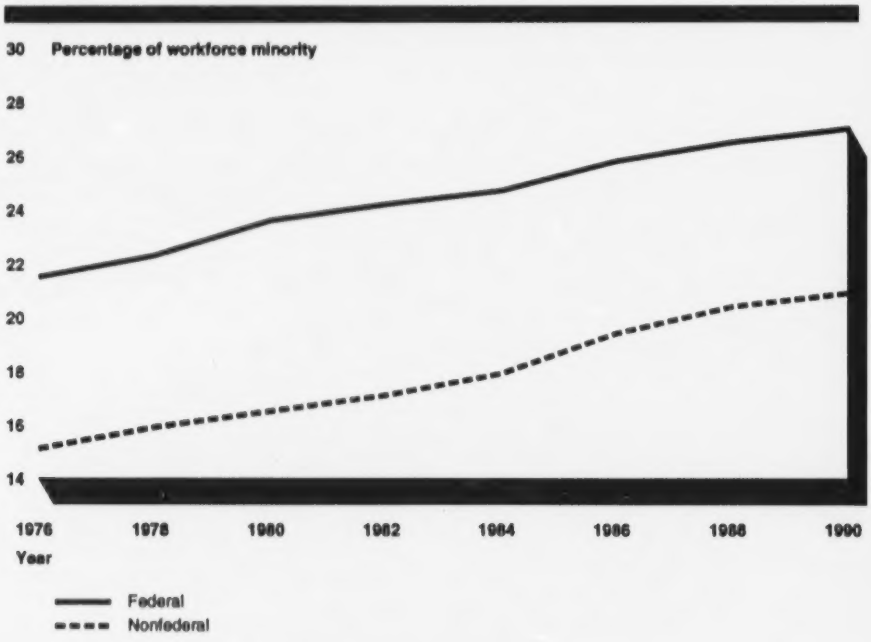
[4]We sent the survey to a random sample of over 5,000 federal employees. The full results of that survey will be presented in a future GAO report.

of federal workers were married and living with their spouse, and nearly 76 percent of these married workers' spouses were also working.

Federal Minority Percentage Exceeded Nonfederal Minority Percentage Throughout 1976 Through 1990 Period

Throughout the 1976 through 1990 time period, a greater proportion of the federal workforce was racial or ethnic minorities than in the nonfederal workforce. Figure 3.7 shows the changes in the percentages of the federal and nonfederal workforces that were minorities during this period.

Figure 3.7: Percentage of Federal and Nonfederal Workforces That Were Minorities Increased at About the Same Rate Between 1976 and 1990



Sources: Federal data are from OPM; nonfederal data are from BLS.

The percentages of minority workers in both workforces increased between 1976 and 1990 at about the same rate. As a result, the federal/nonfederal difference in minority composition was about the same in 1990 as it was in 1976. Despite the increased minority representation in the nonfederal workforce during this period, the percentage of nonfederal

jobs held by minorities in 1990 (20.9 percent) was still not as large as the percentage of federal jobs held by minorities in 1976 (21.5 percent).[5]

Each sector's changes in minority composition between 1976 and 1990 varied considerably by racial and ethnic group. (See table 3.3.) The change in the percentage of the workforce that was Hispanic was greater in the nonfederal sector than in the federal sector. Conversely, the increase in Black representation was greater in the federal sector.

Table 3.3: Race/National Origin Composition and Change in the Federal and Nonfederal Workforces Differed Between 1976 and 1990

Race/ national origin	Percentage of workforce					
	Federal			Nonfederal		
	1976	1990	Change	1976	1990	Change
White	78.9	73.0	-5.5	84.9	79.1	-5.8
Minority	21.5	27.0	+5.5	15.1	20.9	+5.8
Black	14.6	16.9	+2.3	9.4	10.4	+1.0
Hispanic	3.5	5.0	+1.5	4.2	7.5	+3.3
Asian/ other	3.4	5.1	+1.7	1.5	3.0	+1.5
Total	**100.0**	**100.0**		**100.0**	**100.0**	

Sources: Federal data are from OPM; nonfederal data are from BLS.

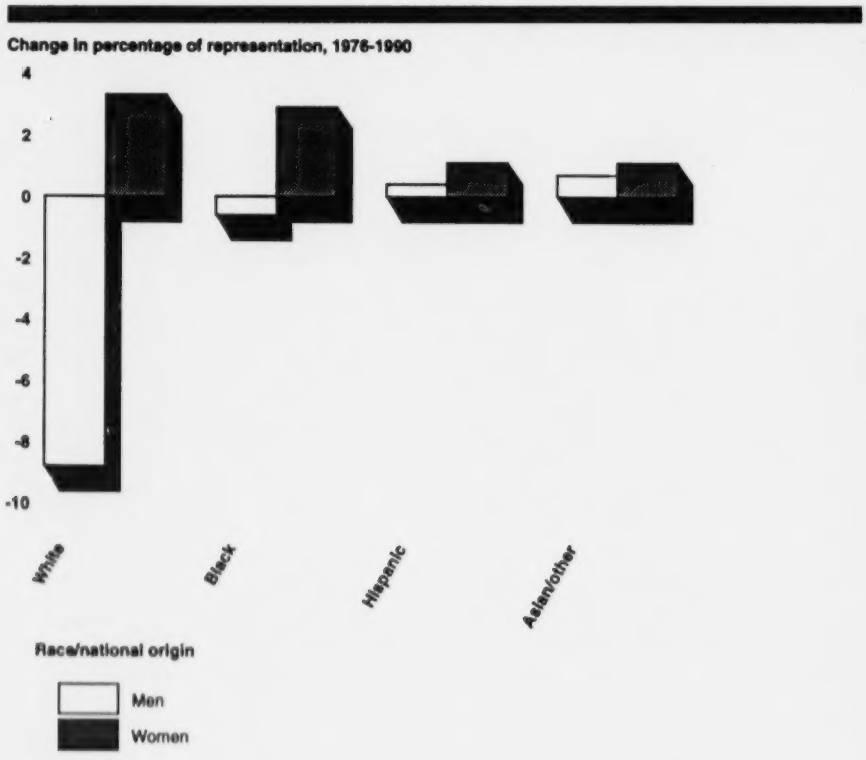
In both 1976 and 1990, the federal government had a smaller percentage of White and Hispanic employees, and a larger percentage of Black and Asian/other employees than in the nonfederal workforce. The same pattern was evident in both the white-collar and blue-collar workforces when examined separately.

The changes in the race/national origin composition of the federal workforce during the 1976 through 1990 period occurred primarily within particular gender, age, and occupational groups. For example, as figure 3.8 shows, the percentage of White males declined by nearly 9 percentage points during this period, while the percentage of White females increased by over 3 percentage points. The increases in workforce representation posted by minority women between 1976 and 1990 exceeded any increase

[5]Some of the increase in minority representation in the nonfederal workforce between 1976 and 1990 was due to the introduction of population controls for Hispanics and for illegal immigrants in 1985 and 1986 in the CPS data. This had the effect of artificially increasing Hispanic percentages in the nonfederal workforce by about 1 percentage point between 1984 and 1986.

for minority men. In fact, the percentage of the federal workforce that was Black men went down during this period.

Figure 3.8: Increase in Minority Representation in the Federal Workforce Between 1976 and 1990 Was Primarily Driven by Women



Source: OPM

Also, as table 3.4 shows, almost all of the gain in minority representation in the federal workforce between 1976 and 1990 was in the 35-and-over age group. Conversely, all of the decline in White representation in the federal workforce between 1976 and 1990 occurred in the under-35 age group; the portion of the federal workforce that was White and at least age 35 actually rose slightly.

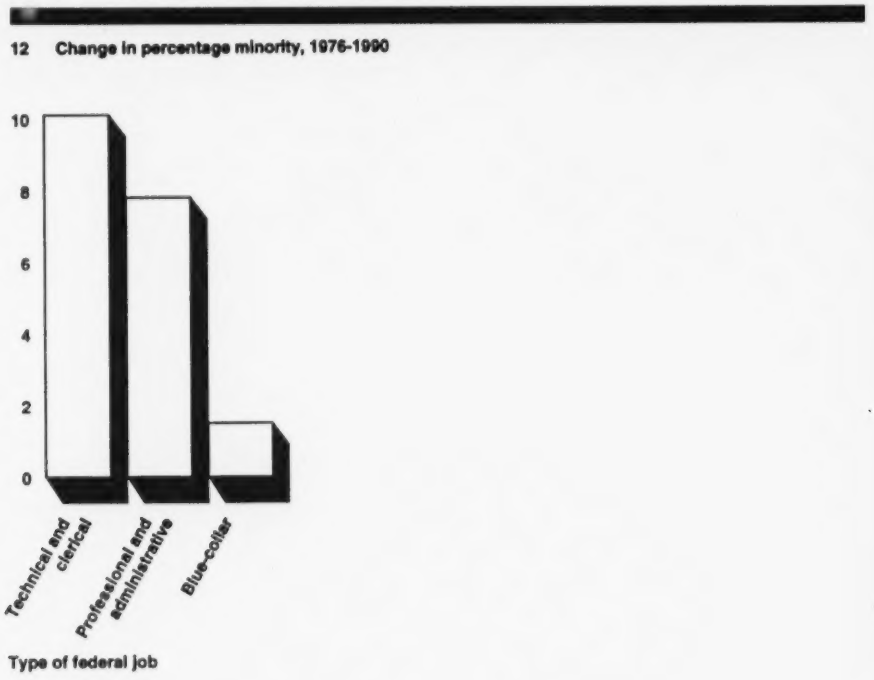
Table 3.4: Increase in Minority Representation in the Federal Workforce Between 1976 and 1990 Was Concentrated in the 35-and-Older Age Group

Race/ national origin	Percentage of federal workforce					
	Under age 35			Age 35 and older		
	1976	1990	Change	1976	1990	Change
White	25.3	17.2	-8.1	53.2	55.8	+2.6
Minority	8.0	8.4	+0.4	13.5	18.6	+5.1
Black	5.5	5.5	+0.0	9.1	11.4	+2.3
Hispanic	1.3	1.6	+0.3	2.2	3.4	+1.2
Asian/other	1.2	1.3	+0.1	2.2	3.8	+1.6

Source: OPM.

The increase in minority representation in the federal workforce between 1976 and 1990 was also largely confined to white-collar professional/administrative and technical/clerical occupations. (See fig. 3.9.) In contrast, the percentage of the blue-collar workforce that was minority changed very little between 1976 and 1990.

Figure 3.9: Increase in Minority Representation in the Federal Workforce Between 1976 and 1990 Was Primarily in White-Collar Technical/Clerical and Professional/Administrative Jobs



Source: OPM.

Although minorities were increasingly moving into white-collar occupations during this period, they were still concentrated in lower graded federal jobs. In 1990, for example, minority men and women comprised about 50 percent of employees at the GS-2 pay grade, but only about 10 percent of employees in the Senior Executive Service.[6]

Federal Workforce Was Older and Became More "Middle Aged" Than Nonfederal Workforce

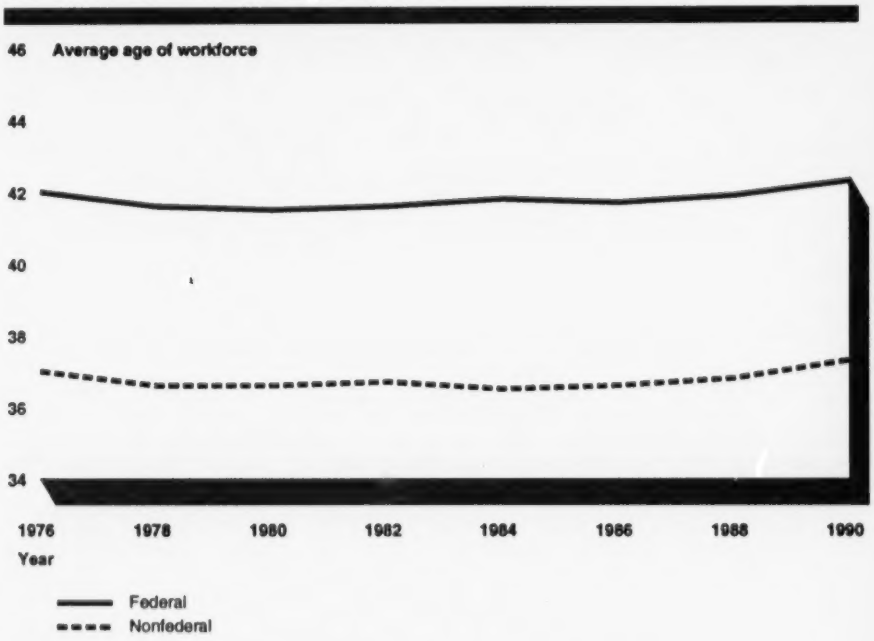
Like the gender and minority compositions of the federal and nonfederal workforces, the age characteristics of these two workforces also differed. The federal workforce was consistently older than the nonfederal workforce.

Figure 3.10 shows the average age of employees in the federal and nonfederal workforces from 1976 through 1990. The average age of employees in both workforces remained fairly constant throughout this

[6]GAO/T-GGD-92-2, Oct. 23, 1991, p. 10.

period, with the federal workforce always about 5 years older than the nonfederal workforce.

Figure 3.10: Federal and Nonfederal Workforces' Average Ages Changed Little Between 1976 and 1990



Sources: Federal data are from OPM; nonfederal data are from BLS.

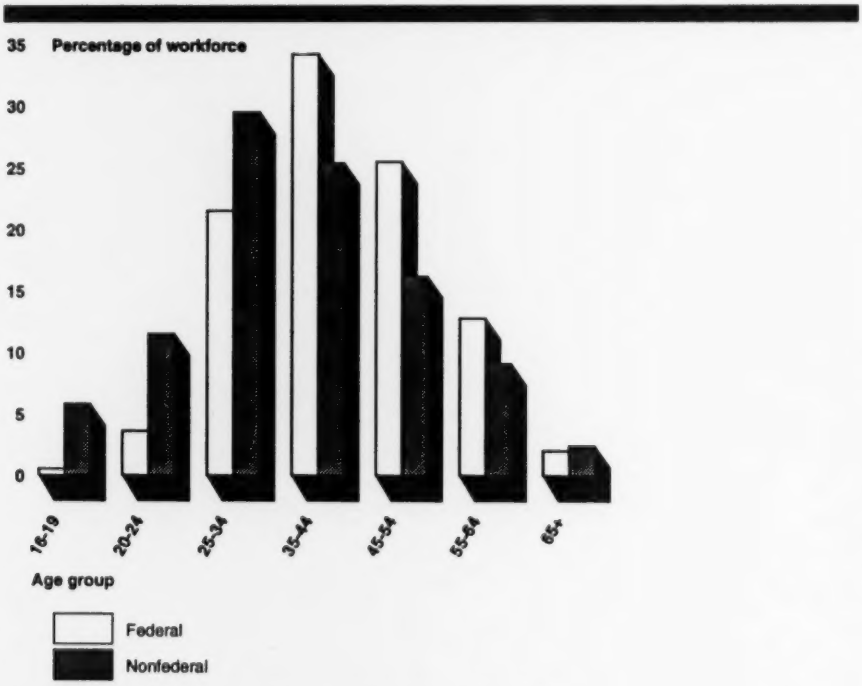
Analyzed by gender, the 1990 federal/nonfederal differences in average ages were greater for male workers than for female workers. Federal men's average age was 43.6 in 1990, compared with 37.3 for men in the nonfederal sector—a 6.3-year difference. Federal women's average age was 40.5, compared with 37.2 for nonfederal women—a 3.2-year difference.

While useful as a summary measure of age, the average age statistic masks some significant differences in federal/nonfederal employee ages. A clearer and more precise understanding of those differences can be obtained by comparing the age structure of each workforce, breaking each down into specific age categories.

As figure 3.11 shows, a smaller percentage of federal employees were in age groups below age 35 than in the nonfederal sector in 1990. Overall,

nearly 60 percent of federal employees were between the ages of 35 and 54, compared with less than 40 percent in the nonfederal sector. The same type of pattern is evident when looking at only white-collar or blue-collar employment or when the age composition of the federal workforce is analyzed by race or sex.

Figure 3.11: A Higher Percentage of the Federal Workforce Was Age 35 and Older in 1990 Than in the Nonfederal Workforce



Sources: Federal data are from OPM; nonfederal data are from BLS.

Analysis of the changes in the federal and nonfederal workforces' age structures between 1976 and 1990 are also instructive. Although both the federal and nonfederal workforces' age structures changed during this period, the federal changes were more dramatic. (See table 3.5.) For example, the representation of younger workers (below age 35) in the federal government fell by a total of 8.7 percentage points between 1976 and 1990, compared with a decline of only 2.9 percentage points in the nonfederal sector. The representation of older workers (age 35 and above) increased by 8.6 percentage points in the federal government, compared with a gain of only 2.8 percentage points in the nonfederal sector.

Table 3.5: Federal Age Structure Changes Were More Dramatic Than Nonfederal Age Structure Changes Between 1976 and 1990

	Percentage of workforce		
Year and sector	Below 35	35 and older	Total[a]
1976			
Federal	34.3	65.6	99.9
Nonfederal	49.7	50.3	100.0
1990			
Federal	25.6	74.2	100.1
Nonfederal	46.8	53.1	99.9
1976-1990 change			
Federal	-8.7	+8.6	
Nonfederal	-2.9	+2.8	

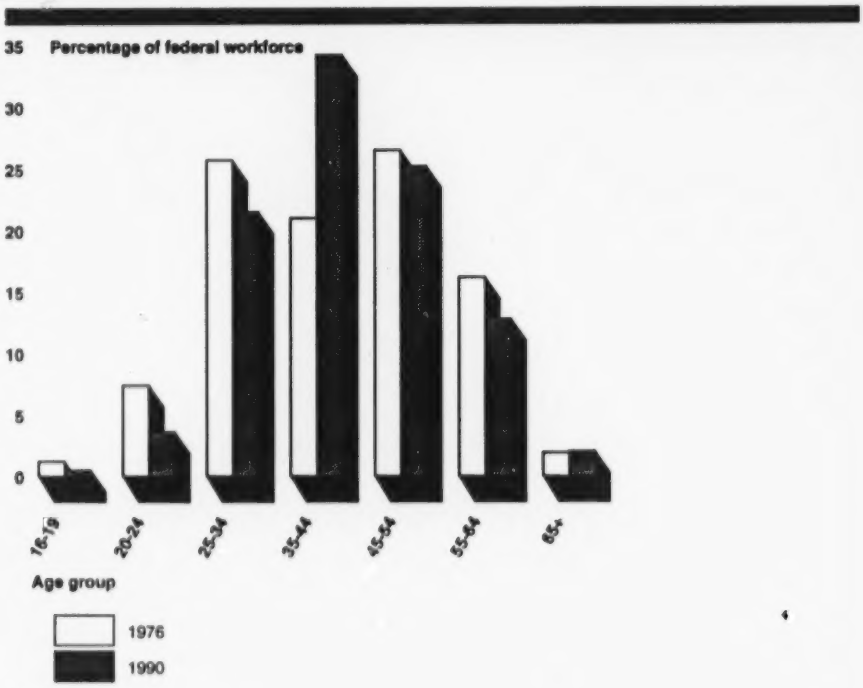
[a]Totals do not always equal 100.0 because of rounding.

Sources: Federal data are from OPM; nonfederal data are from BLS.

The 1976 through 1990 changes were particularly pronounced in the 35-to-44 age group. That age group's portion of the federal workforce increased by more than 13 percentage points, from 21.0 percent in 1976 to 34.2 percent in 1990. In contrast, the 35-to-44 age group in the nonfederal workforce increased by only 7 percentage points during this period. Interestingly, the representation of employees older than 44 declined in both sectors, indicating that the two workforces (particularly the federal workforce) were becoming more "middle aged" instead of "older."

The "middle-aging" of the federal workforce is graphically illustrated in figure 3.12. Whereas the federal workforce in 1976 was somewhat evenly distributed across the 25-to-64 age categories, by 1990, the distribution was clearly focused in the 35-to-44 age group. The percentage of the workforce in almost every other age category declined between 1976 and 1990.

Figure 3.12: Federal Workforce Age Composition Changed Between 1976 and 1990

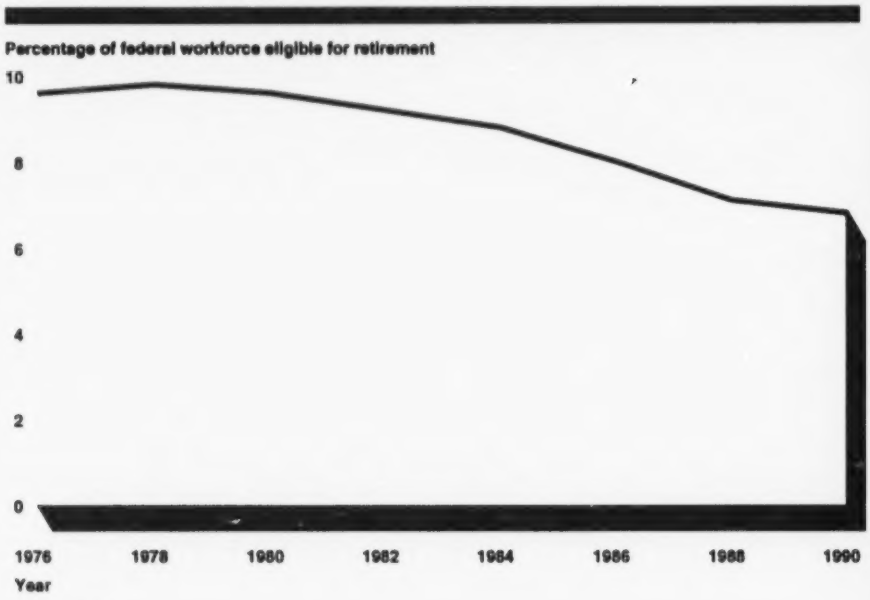


Source: OPM.

Another important statistic to track over time is the percentage of the federal workforce that is eligible for retirement.[7] Figure 3.13 shows these data from 1976 through 1990, and illustrates that despite a relatively constant average age of the federal workforce, the percentage of the federal workforce eligible for retirement has gone down since 1978.

[7]Generally, federal retirement eligibility is a function of both age and length of service. Under regular retirement circumstances in 1990 (i.e., not a reduction in force, disability, or other nonregular situations), an employee could retire at age 55 with 30 years of service, age 60 with 25 years of service, or age 62 with 5 years of service.

Figure 3.13: Percentage of the Federal Workforce Eligible for Retirement Declined Between 1978 and 1990



Source: OPM.

This decline in the percentage of the federal workforce eligible for retirement despite a constant average age is explained by the drop in the average length of service during this period. In 1976, the average length of service for federal employees was 15.6 years; by 1990, the average length of service was only 12.9 years.

However, the drop in the percentage eligible for retirement and the relatively static average age is not expected to continue. As the first members of the baby-boom generation reach the age of 55 in 2001, OPM has predicted that the rate of retirement from 2002 to 2009 could be 40 percent higher than the rate in the mid-to late-1980s.[8]

Differences in Federal Workforce Demographics by Agency and Region

In addition to the differences between the federal and nonfederal workforces in terms of their gender, minority, and age characteristics, there were also differences in these characteristics within the federal government by agency and geographic region. There were also differences among agencies and regions in the degree to which they changed between 1976 and 1990.

[8]OPM, "Baby Boomers Head for Retirement," Federal Staffing Digest, 3 (Apr. 1991), pp. 1, 7.

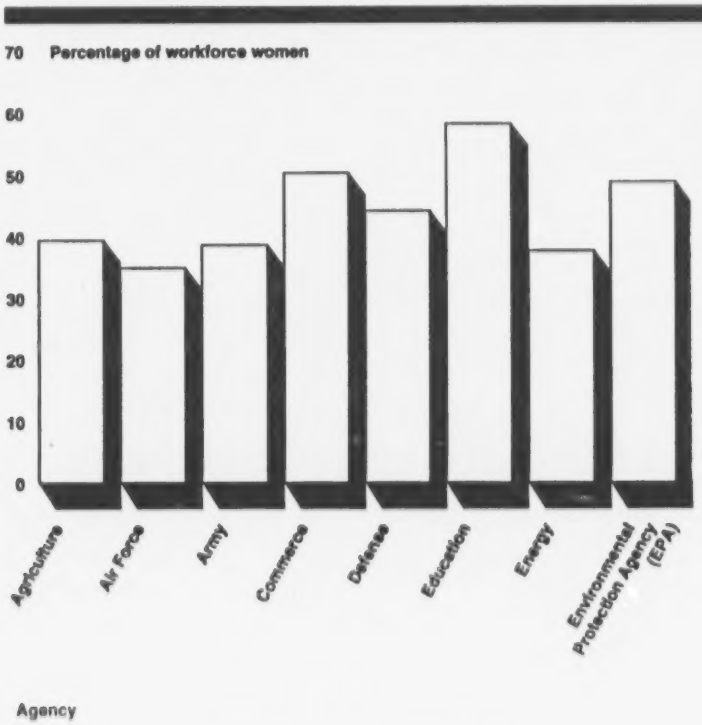
Federal Workforce Demographics Varied Among Agencies

We examined the 1990 federal workforce data by agency to determine the degree to which these agencies differed in their proportions of women, minorities, age categories, and percentage of the workforce eligible for retirement. We also examined changes in these characteristics by agency between 1976 and 1990.

Gender Composition Varied by Agency

Figure 3.14 shows the percentage of the federal workforce that was female within selected agencies in 1990.[9] Clear differences in workforce gender composition existed across the agencies, with the percentage of females ranging from 25.4 percent in the Department of Transportation to 64.9 percent in the Department of Health and Human Services (HHS).

Figure 3.14: Federal Agencies Differed in the Percentage of Their Workforces That Was Women in 1990

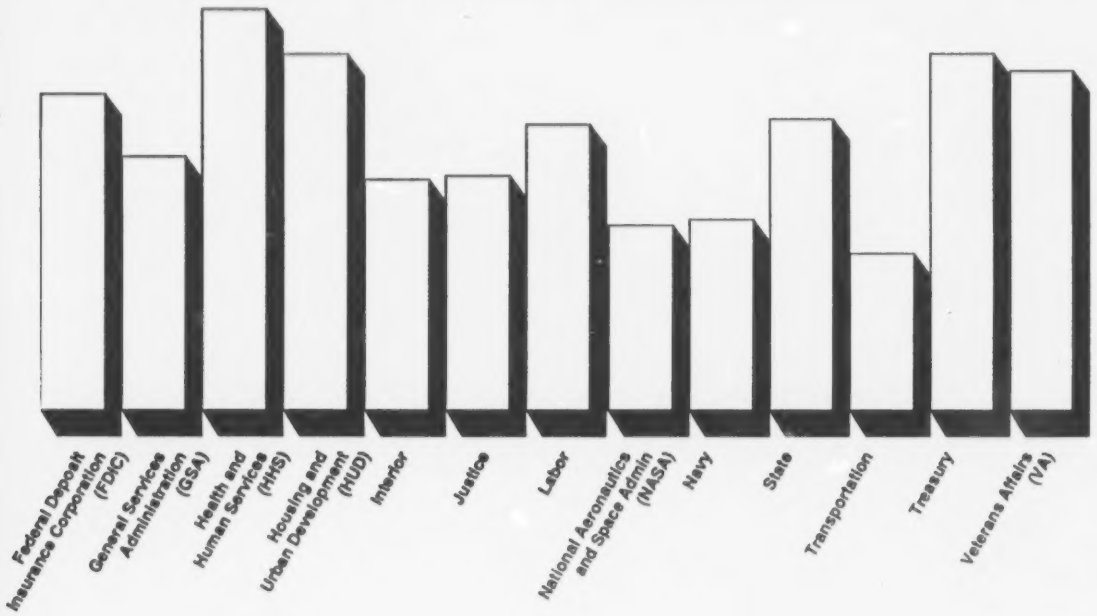


[9]We focused on cabinet-level departments and any agencies that had at least 10,000 employees as of March 31, 1990.

Race/National Origin Composition Varied by Agency

Likewise, as figure 3.15 shows, minority composition also varied across these agencies, ranging from 16.0 percent at NASA to 46.1 percent at the Department of Education.

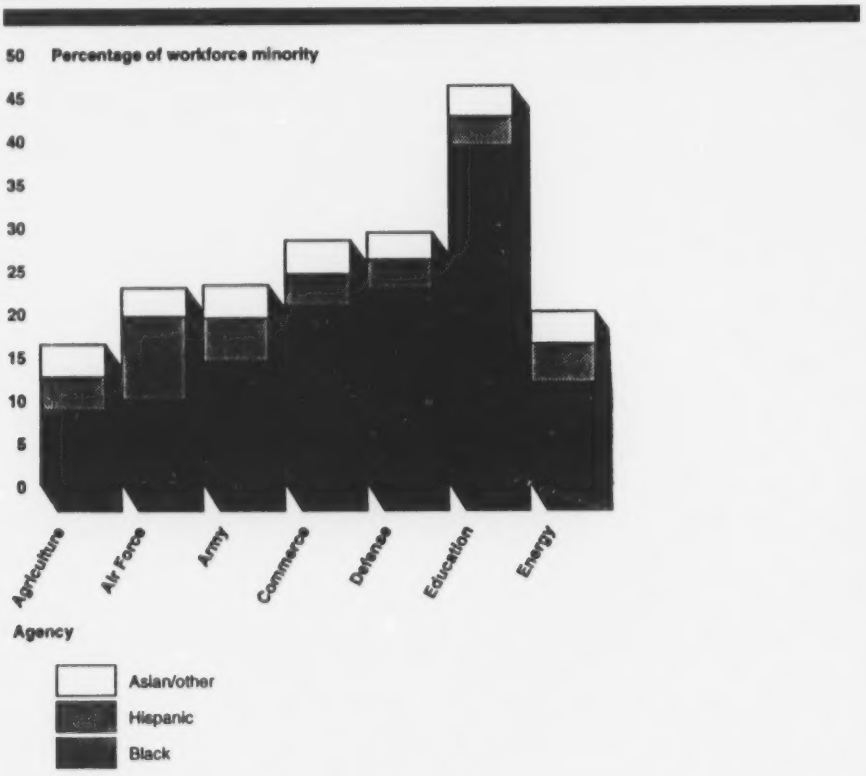
Within the general rubric of "minority," however, lie other elements of diversity. In some agencies, the minority population was almost entirely composed of Black employees (e.g., at the Department of Education, where over 85 percent of its minority employees were Black). Other agencies had relatively strong concentrations of Hispanic employees (e.g., at the Department of Justice, where 11.3 percent of all employees were Hispanic) or Asian/other employees (e.g., at the Department of the Interior, where two-thirds of its minorities were "Asian/other").

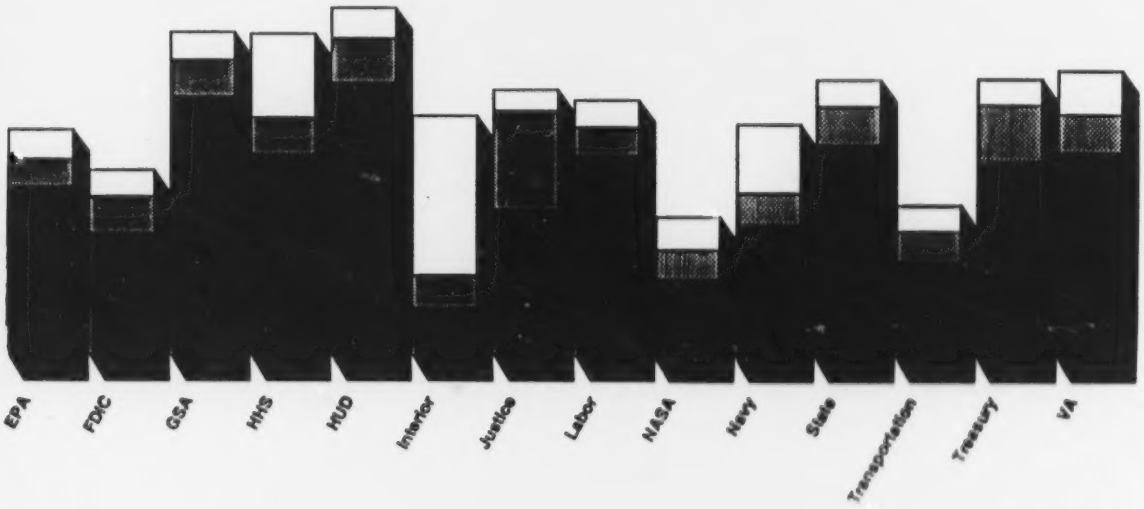


Note: "Defense" as used here includes other parts of the Department of Defense not in the Departments of the Army, Air Force, or Navy.

Source: OPM.

Figure 3.15: Federal Agencies Differed in the Percentage of Their Workforces That Was Minorities and in Minority Composition in 1990





Note: "Defense" as used here includes other parts of the Department of Defense not in the Departments of the Army, Air Force, or Navy.

Source: OPM.

Changes in Gender and Minority Composition Over Time Varied Across Agencies

While the proportion of an agency's workforce that is female or minority provides a good indication of the degree of workforce diversity in the agency, that statistic alone can tell only part of the story. Of at least equal relevance is the degree of change in those demographic characteristics over time. Table 3.6 shows changes between 1976 and 1990 in the percent female and the percent minority in the federal agencies we examined.

Table 3.6: Some Federal Agencies' Gender and Minority Composition Changed More Than Other Agencies' Between 1976 and 1990

	Percentage of workforce					
	Female			Minority		
Agency	1976	1990	Change	1976	1990	Change
Agriculture	26.7	39.4	+12.7	13.9	16.4	+2.5
Air Force	27.1	34.9	+7.8	17.9	22.9	+5.0
Army	30.5	38.6	+8.1	16.7	23.0	+6.5
Commerce	39.2	50.2	+11.0	21.1	28.0	+6.9
Defense	35.1	44.1	+9.0	22.7	29.0	+6.3
Education	[a]	58.1	[a]	[a]	46.1	[a]
Energy	[a]	37.6	[a]	[a]	20.0	[a]
EPA	35.9	48.7	+12.8	11.8	25.9	+14.1
FDIC	30.2	51.3	+21.1	11.8	21.2	+9.4
GSA	33.6	41.2	+7.6[b]	40.0	37.0	-3.0[b]
HHS[a]	60.7	64.9	+4.2	31.4	36.9	+5.5
HUD	44.5	57.7	+13.2	26.9	39.1	+12.2
Interior	28.8	37.5	+8.7	26.7	27.2	+0.5
Justice	31.4	38.1	+6.7	20.9	30.5	+9.6
Labor	46.3	46.4	+0.1	30.6	31.2	+0.6
NASA	19.1	30.0	+10.9	8.4	16.0	+7.6
Navy	23.5	30.9	+7.4	20.5	26.3	+5.8
State	43.7	47.2	+3.5	26.4	30.7	+4.3
Transportation	17.7	25.4	+7.7	13.3	17.3	+4.0
Treasury	45.6	57.8	+12.2	21.0	31.6	+10.6
VA[c]	49.7	55.0	+5.3	28.7	32.5	+3.8
All agencies	**34.9**	**42.8**	**+7.9**	**21.5**	**27.0**	**+5.5**

[a]The Departments of Education and Energy did not exist in 1976. HHS was the Department of Health, Education, and Welfare in 1976, from which the Department of Education was created.

[b]Some of the differences between 1976 and 1990 at GSA may be due to transfers of National Archives and Records Administration employees in 1985 and building operations employees at various times during this period.

[c]The Department of Veterans Affairs was the Veterans Administration in 1976.

Source: OPM.

Some agencies clearly changed more than others in their gender and minority composition during the 1976 through 1990 period. For example, the 21.1-percentage-point rise in the percent female in the FDIC workforce moved the agency from being less than one-third female to over one-half female.[10] On the other hand, the percent female at the Department of Labor stayed about the same (although the department was about half female in both years). Likewise, some agencies' workforces became much more minority based by 1990 than they had been in 1976 (e.g., EPA and HUD), while other agencies' percent minority stayed about the same (e.g., Interior) or even decreased (GSA).[11]

Agencies Differed in Average Age and Percentage of Their Workforce Eligible for Retirement

There were also differences among federal agencies in the average age of their workforces and the percentage of their workforces that were eligible for retirement. Tables 3.7 and 3.8 show the changes in these data by agency between 1976 and 1990.

[10]White females at FDIC went from 24.0 percent of the workforce in 1976 to 36.6 percent in 1990; Black females went from 5.0 percent in 1976 to 10.3 percent in 1990.

[11]Minority gains were concentrated among Black females and were at the expense of White males (since the percentage of White females was almost always up). For example, at EPA the percentage of Black females increased more than 8 percentage points (from 6.8 percent in 1976 to 15.2 percent in 1990). The percentage of White males at EPA dropped from 60.0 percent in 1976 to 44.1 percent in 1990, nearly a 16-percentage-point decline.

Table 3.7: Average Age of Federal Workforce and Changes in Average Age Between 1976 and 1990 Varied by Agency

Agency	Average age 1976	Average age 1990	Change in average age
Agriculture	41.7	42.7	+1.0
Air Force	43.8	43.0	-0.8
Army	43.2	43.2	0.0
Commerce	40.9	41.6	+0.7
Defense	44.4	42.4	-2.0
Education	[a]	43.4	[a]
Energy	[a]	43.4	[a]
EPA	36.3	39.8	+3.5
FDIC	35.7	38.3	+2.6
GSA	43.3	43.5	+0.2[b]
HHS[a]	38.2	42.8	+4.6
HUD	42.8	44.4	+1.6
Interior	40.9	42.3	+1.4
Justice	38.5	38.2	-0.3
Labor	40.0	43.9	+3.9
NASA	43.2	42.8	-0.4
Navy	42.9	42.3	-0.6
State	42.1	42.6	+0.5
Transportation	41.0	41.8	+0.8
Treasury	38.3	39.8	+1.5
VA[c]	40.9	42.6	+1.7
All agencies	**41.7**	**42.3**	**+0.6**

[a]The Departments of Education and Energy did not exist in 1976. HHS was the Department of Health, Education, and Welfare in 1976, from which the Department of Education was created.

[b]Some of the differences between 1976 and 1990 at GSA may be due to transfers of Archives employees in 1985 and building operations employees at various times during this period.

[c]The Department of Veterans Affairs was the Veterans Administration in 1976.

Source: OPM.

Table 3.8: Percentage of Federal Workforce Eligible for Retirement and Change in Percentage Eligible Between 1976 and 1990 Varied by Agency

Agency	Percentage eligible for retirement		Change in percentage eligible
	1976	1990	
Agriculture	11.8	6.9	-4.9
Air Force	9.8	6.9	-2.9
Army	10.4	7.5	-2.9
Commerce	10.2	7.7	-2.5
Defense	13.2	7.6	-5.6
Education	[a]	7.4	[a]
Energy	[a]	6.9	[a]
EPA	5.0	4.5	-0.5
FDIC	5.7	2.3	-3.4
GSA	12.3	9.3	-3.0[b]
HHS[a]	6.6	6.7	+0.1
HUD	10.8	9.8	-1.0
Interior	8.7	6.8	-1.9
Justice	5.9	3.0	-2.9
Labor	9.4	9.3	-0.1
NASA	8.1	12.5	+4.4
Navy	10.9	6.3	-4.6
State	11.7	10.4	-1.3
Transportation	6.6	8.8	+2.2
Treasury	7.4	4.9	-2.5
VA[c]	8.8	6.4	-2.4
All agencies	**9.6**	**6.8**	**-2.8**

[a]The Departments of Education and Energy did not exist in 1976. HHS was the Department of Health, Education, and Welfare in 1976, from which the Department of Education was created.

[b]Some of the differences between 1976 and 1990 at GSA may be due to transfers of Archives employees in 1985 and building operations employees at various times during this period.

[c]The Department of Veterans Affairs was the Veterans Administration in 1976.

Source: OPM.

The average age of federal workers in 1990 varied from 38.2 at Justice to 44.4 at HUD. The percentage of the workforce eligible for retirement in 1990 varied from 2.3 percent at FDIC to 12.5 percent at NASA. Equally as interesting as the average age or percentage eligible for retirement were the changes that occurred in those measures between 1976 and 1990. For example, the average age of the HHS workforce increased by nearly 5 years during this period. The percentage of the workforce eligible for retirement at NASA went from 8.1 percent to 12.5 percent between 1976 and 1990; at Navy the change was in the other direction, from 10.9 percent in 1976 to 6.3 percent in 1990.

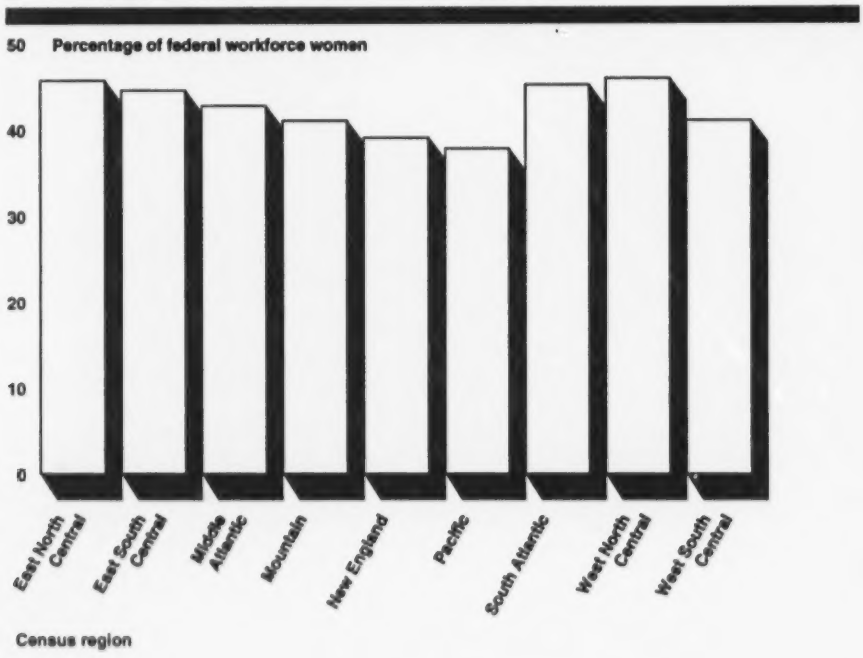
As mentioned earlier, OPM has predicted much higher rates of retirement governmentwide from 2002 to 2009 due to the aging of the baby-boom generation. OPM also noted that some agencies may face large-scale retirements in the 1990s because they hired large numbers of employees in the 1960s.

Gender Composition of the Federal Workforce Varied Little by Census Region Compared With Race/National Origin Differences by Region

There were also demographic differences within the federal workforce by census region, although some of the differences were not as pronounced as the differences by agency.[12] For example, as figure 3.16 shows, the percentage of the federal workforce that was female in 1990 varied from one region to another by less than 10 percentage points. As figure 3.14 shows, the percent female varied among agencies by nearly 40 percentage points.

[12]The states composing each census region are as follows: New England (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont); Middle Atlantic (New Jersey, New York, and Pennsylvania); East North Central (Illinois, Indiana, Ohio, Michigan, Wisconsin); West North Central (Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota); South Atlantic (Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, and West Virginia); East South Central (Alabama, Kentucky, Mississippi, and Tennessee); West South Central (Arkansas, Louisiana, Oklahoma, and Texas); Mountain (Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming); and Pacific (Alaska, California, Hawaii, Oregon, and Washington).

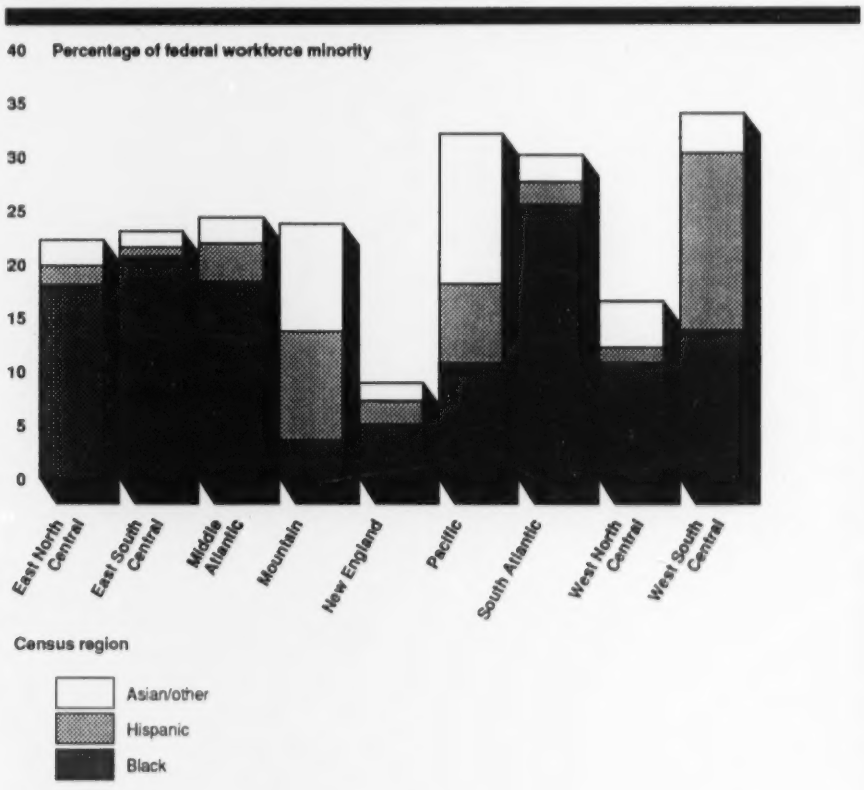
Figure 3.16: Percentage of Federal Workforce That Was Women Varied Little Between Census Regions in 1990



Source: OPM.

However, the race/national origin composition of the federal workforce did vary considerably across the regions. Figure 3.17 shows the percentage of federal employment in each census region that was minority in 1990 and, within the general minority category, by race/national origin.

Figure 3.17: Percentage of Federal Workforce That Was Minorities, and the Minority Composition, Varied Between Census Regions in 1990



Source: OPM.

The New England region had the smallest percentage of minorities in the federal workforce (less than 9 percent), while the West South Central region had the highest percentage (over 34 percent). Certain minority groups were more common in particular areas than others. The Pacific region had the highest concentration of Asian/other employees (over 14 percent), the West South Central region had the highest level of Hispanics (over 16 percent), and the South Atlantic region had the greatest percentage of Blacks (nearly 26 percent).

Summary

The data presented in this chapter indicate that the federal and nonfederal workforces were demographically different in both 1976 and 1990, but both workforces changed during this period in similar ways. The data show that for the 1976 through 1990 period the following were true:

- The nonfederal workforce had a greater proportion of women in its workforce than the federal workforce. However, while both workforces' female representation grew from 1976 through 1990, the changes were more pronounced in the federal government. Thus, the gap between federal and nonfederal female representation closed somewhat during this period. The gender composition changes in the federal government were particularly evident in professional/administrative occupations.
- The federal workforce had a greater proportion of minorities, particularly Black women, in its workforce than the nonfederal workforce. The proportion of minorities grew in each workforce from 1976 through 1990 at roughly equivalent rates. The gains made by minorities in the federal government were concentrated among white-collar workers and workers over the age of 35.
- The federal workforce was older than the nonfederal workforce, and that age difference remained fairly constant throughout the 1976 through 1990 period. The number of federal employees in the 35-to-44 age group grew more dramatically during this period than in the nonfederal sector.
- Within the federal government, federal agencies differ in their proportion of women and minorities and in their average age and percentage of their workforces eligible for retirement. Some agencies have changed dramatically in these measures between 1976 and 1990.
- The percentage of the federal workforce that was minority varied from one census region to another, as did the mix of minorities.

The next chapter of this report will discuss the implications of these data for federal workforce planning.

Chapter 4

Implications for Federal Human Resource Management

The issues discussed in the two previous chapters have several implications for federal human resource management. First, since experts disagree as to the likelihood of widespread tight labor markets and skills mismatches, federal policymakers and workforce planners should not assume that these conditions will occur. Efforts taken now to address federal labor shortages and skills gaps that may not occur could be a waste of valuable resources or be counterproductive to effective human resource management. As one author noted before the publication of Workforce 2000,

> "(d)espite the attractiveness of 'year 2000 and beyond' speculations, managers and policymakers must plan for the more immediate future on the basis of rational expectations and available information. For practical purposes, it is futile to plan for more than a dozen years hence, except in unusual circumstances. Beyond this horizon, overall economic conditions and the competitive situation of industries and firms can change so fundamentally as to make planning an idle exercise."[1]

But what if labor shortages and skills gaps do occur? Can the federal government wait to respond to these challenges? Experts believe that any future labor shortages and skills gaps will probably occur within certain occupations and geographic areas. Because these types of shortages and gaps are difficult if not impossible to predict with any certainty, federal policymakers and workforce planners can do little now to prepare for them.

Nonfederal employers' traditional short-term response to such conditions has been to bid up the price of labor that is in demand. In the past, federal agencies have not had the flexibility they needed to compete with these nonfederal employers, particularly in high wage areas, because of uniform national pay scales and other inflexibilities. With the passage and implementation of the Federal Employees' Pay Comparability Act of 1990, though, the federal government should be able to more effectively participate in this process. Locality pay will make white-collar federal employees' salaries more competitive within pay areas. Federal employers can also offer higher special pay rates, recruitment and retention bonuses, and other incentives that were not previously permitted.[2]

[1]Sar A. Levitan, "The Changing Workplace," in Policy Studies Review Annual, 8 (1987), p. 377.

[2]The additional pay flexibilities allowed under FEPCA pertain only to white-collar employees in three major pay systems. The act does not cover blue-collar employees.

Clear Demographic Changes Suggest Policy Options

In comparison to labor shortages and skills gaps, federal workforce planners are on much firmer ground in taking action now to respond to and to anticipate demographic changes. Past demographic patterns of change are clear and future changes are relatively predictable. Furthermore, the data indicate that these demographic changes and conditions (increasing number of women, minorities, and older workers) are particularly evident in the federal workforce.

The actions federal policymakers and workforce planners can take to respond to these demographic changes and conditions depend on the particular changes and conditions they are trying to address. The increasing presence of women in the workforce and the prevalence of households in which both husbands and wives work suggest that the federal government consider policies that will help employees and prospective employees balance both their work and family responsibilities. A wide range of policies and programs can be considered under this "work/family" heading, including the following:

- Child care, which can be on-site or near-site child care centers for employees' children, assistance to employees in locating quality child care in local communities, provisions for emergency child care when regular providers are not available, sick child care when the child is mildly ill and cannot go to his or her regular provider, and paying part of employees' child care expenses.
- Elder care, including on-site or near-site centers for employees' elderly dependents, assistance in locating care providers or other assistance for elderly dependents in local communities, and helping to organize long-term care insurance for employees and their dependents.
- Flexible work schedules, such as allowing employees to vary starting and ending times for work, work a full-time schedule in fewer than five working days, or work part time in an individual position or as a job sharer.
- Flexible leave policies, such as permitting employees to take time off for the birth or adoption of a child or to care for a family member who is ill, or perhaps sharing leave with other family members who work for the government.
- Flexible benefits, thereby allowing employees to select benefits that meet their needs better than a generic set of benefits and/or to pay dependent care expenses out of accounts established with employees' pre-tax salaries.
- Flexible workplaces, allowing employees to work at home or at a satellite office close to their home at least part of the time.

Similarly, the increasing number of minorities in the workforce suggest that federal agencies may need to initiate or expand training and mentor programs to recognize the cultural diversity of the workforce and better utilize the talents these workers bring to the workplace. The aging of the federal workforce poses another set of policy options for workforce planners and policymakers. As increasing numbers of federal employees become eligible to retire in the early part of the 21st century, changes in employment conditions or retirement policies may be needed to encourage their continued employment or better accommodate their unique needs.

Some of these policies and programs are currently being implemented in certain federal agencies but may need expansion or greater emphasis. For example, as of January 1, 1992, there were 79 child care centers in federal buildings controlled by GSA, hundreds in Department of Defense installations, and dozens more in VA and other agencies' space. However, these centers provide assistance to only a small portion of federal civilian employees with children who need care. Although federal employees have been legally authorized to use flexible work schedules since 1979, many federal agencies and/or supervisors do not permit their employees to use those schedules. Federal workers may use their sick leave to care for an immediate family member who is sick, but only if that family member has a contagious disease. No governmentwide policy exists guaranteeing federal employees the right to take unpaid parental leave after the birth or adoption of a child.[3] Therefore, if the federal government is to fully respond to past demographic changes and anticipate future changes that can affect employees' work/family balance, some changes in human resource policy or practice may be needed.

Why Recognition of Changing Demographics Is Important

If federal decisionmakers develop workforce policies that effectively meet the challenges presented by these demographic realities, they should be able to significantly improve the size of the pool of available workers from which new employees are selected. For example, BLS data clearly indicate that improving the availability of affordable child care can expand the

[3]Certain agencies and labor contracts do guarantee employees maternity and/or paternity leave. For example, GAO guarantees its employees 6 months unpaid parental leave for the birth or adoption of a child, with the same or comparable job assured at the end of that period.

[4]BLS has concluded that 1.1 million young mothers are not in the labor force because of the lack of affordable, quality child care. See Peter Cattan, "Child-Care Problems: An Obstacle to Work," Monthly Labor Review, 114 (Oct. 1991), pp. 3-9.

number of women in the labor force.[4] Policies to accommodate older workers and retirees can also increase the size of the labor pool.[5]

Perhaps more importantly, though, there is evidence to indicate that employers who adopt policies to respond to changing workforce demographics can have a competitive advantage in attracting and retaining employees and improving productivity.[6] For example, employers who offer family-friendly benefits such as flexible schedules and assistance in locating child and elder care resources can be considerably more attractive to applicants than otherwise comparable employers who do not offer such benefits. Furthermore, employers who fail to offer such assistance may also lose the talent they are able to attract to these more family-friendly employers. Similar dynamics may occur with regard to minority employees who do not feel their employer has accommodated them or fully valued their talents and older workers who do not view their employer's policies as conducive to further employment. Recruitment and retention of quality workers is important to the accomplishment of agencies' missions regardless of whether there are generalized labor shortages or skills gaps.

Federal employers who do not provide such benefits and programs are and will be increasingly at a disadvantage in recruiting and retaining workers, because increasing numbers of nonfederal employers are providing them. Examples of the changes nonfederal employers have made follow:

- In 1989, the percentage of full-time employees in medium and large private sector establishments offering child care assistance was five times greater than in 1985.[7] The percentage of state and local government employees eligible to receive child care assistance more than quadrupled between 1987 and 1990.[8]
- In 1989, the percentage of employees in medium and large private sector firms allowed to select benefits to meet their personal needs was more than four times what it was just 3 years earlier.

[5]For example, a survey by Louis Harris and Associates for the Commonwealth Fund found that there are 1.9 million available workers between the ages of 50 and 64 who are ready and able to go back to work.

[6]See, for example, a study by the Conference Board entitled Linking Work-Family Issues to the Bottom Line (Report Number 962, New York: The Conference Board, 1991).

[7]Stephanie L. Hyland, "Helping Employees With Family Care," Monthly Labor Review, 113 (Sept. 1990), pp. 22-26.

[8]BLS, "Employee Benefits in State and Local Governments Address Family Concerns," USDL 91-549 (Oct. 31, 1991).

- The percentage of employees in medium and large private sector firms eligible to use pre-tax spending accounts for dependent care increased from 5 percent in 1986 to 23 percent in 1989. The percentage of state and local government employees eligible for such accounts went up more than sixfold between 1987 and 1990, from 5 percent to 31 percent.

Also, a growing number of employers are offering flexible work schedules, flexible leave policies, elder care assistance, and other programs to help employees deal with work/family conflicts. A number of companies have begun providing diversity training to help their managers appreciate and fully utilize the talents that female and minority employees can bring to the organization. Some companies have begun programs to ease the transition of workers into retirement and to rehire retirees on a temporary basis.

Changes in Human Resource Policies Should Be Carefully Considered

Recognition of the demographic changes the federal workforce has undergone and will undergo is an important first step in the process of making the federal government competitive with nonfederal employers who are offering family-friendly programs. To respond to and anticipate those changes, it is important that federal employers review existing policies and investigate the need to develop new policies or expand or enhance existing ones.

Some of these policies and programs will need to be implemented governmentwide. For example, the adoption of a cafeteria benefit program in the federal government would require a change in statutes affecting all federal employees and would be inequitable if done only by a select few agencies.

Other programs would be best tailored to the demographic conditions in particular federal agencies, since federal agencies differ markedly in their demographic profiles and rates of change in those profiles. HHS, which was nearly 65 percent female in 1990, may need very different programs and policies than the Department of Transportation, which was only 25.4 percent female in 1990. Similarly, because some demographic characteristics differ by geographic area, different strategies may need to be employed in different parts of the country. Sometimes differences in employee demographics may dictate that policies vary between areas within the same agency or between agencies within the same area.

It is also important to recognize that, while employee demographics are important, an agency's demographic profile alone will not indicate whether

the agency should respond to these changes or if the agency decides to respond, what kind of policies and programs it should pursue. For example, an agency that has always been strongly minority based may not need diversity training if its minority employees feel the agency already values its diverse workforce. Conversely, an agency that has a relatively low percentage of minorities in its workforce may need to initiate such training if its minority employees believe their skills are not fully utilized and their cultural differences are not appreciated.

Similarly, although women are the traditional providers of care for children, officials in an agency with a high percentage of female employees should not assume they need to open a child care center. The women in that agency may not have children in need of care or they may have already obtained child care with which they are satisfied. On the other hand, an agency with a relatively high percentage of male employees may find the provision of child care an important incentive to recruitment and retention, since their married male employees' wives are probably in the workforce and child care can be important to male employees as well. Therefore, it is incumbent upon federal employers to examine not only the demographic profile of their workforce but also to determine the specific needs of that workforce that may lie behind the demographic statistics.

Finally, it is important to recognize that other factors, such as organizational needs, may also play a role in determining which workforce policies are appropriate for the changing workforce. For example, two demographically similar agencies with similar employee needs may respond very differently to these challenges if one has experienced difficulty recruiting and retaining employees while the other has not. Likewise, an agency with limited resources may elect to use different policies and programs than it would if its resources were more abundant.

Therefore, programs and policies federal agencies develop to respond to and anticipate the changing demographics of their workforces should be tailored to their particular demographic conditions and to the needs of employees and the agencies themselves.

Forthcoming Studies

This report is the first in a series of reports about these issues. In a future report we will more fully discuss the types of programs and policies that employers can offer to help women (and men) balance their work and family responsibilities. The report will also discuss how needs assessments, policy implementation, and evaluations can be done, as well as some of the barriers to the adoption of these programs in the federal government. At a later date we intend to report more fully on the implications and possible policy responses regarding the increased number of minorities and older workers in the federal government.

In another report to be issued shortly, we will present the results of a survey of over 5,000 federal employees. That survey provides more detailed information on federal employee demographics and their opinions regarding the need for programs to address those changing demographic conditions.

Objectives, Scope, and Methodology

The objectives of this study were to determine (1) whether labor economists and other experts agree that there will be generalized tight labor markets, skills gaps, and demographic changes by the year 2000, as Workforce 2000 and Civil Service 2000 predicted; (2) whether the federal and nonfederal workforces differ with respect to any of these conditions believed likely to occur; (3) whether there are differences within the federal workforce with respect to any of these agreed-upon conditions; and (4) the implications of these findings for federal workforce planning.

To address the first of these objectives, we reviewed a number of books and articles on or related to the conclusions in Workforce 2000 and Civil Service 2000. (See the bibliography for a list of some of the articles reviewed.) We also discussed these issues with officials from BLS and OPM. These publications and discussions led us to conclude that labor shortages and skills gaps may not occur but that changing demographic characteristics of the labor force had been occurring and were likely to continue to occur. Data showing demographic changes in the labor force were drawn primarily from the Handbook of Labor Statistics (BLS, Aug. 1989, Bulletin 2340), supplemented by 1990 data from Employment and Earnings (BLS, Jan. 1991) and unpublished data from the Current Population Survey (CPS).

To address the second of our objectives, we first obtained data from OPM's Central Personnel Data File (CPDF) to describe the federal workforce's demographic characteristics. The data were as of March 31st in each even-numbered year from 1976 through 1990, and included information on all civilian white-collar and blue-collar executive branch employees on board as of those dates (about 2.07 million employees as of 1990). The data did not include employees outside the United States or employees in certain executive branch agencies (e.g., the Federal Bureau of Investigation, the Central Intelligence Agency, National Security Agency, and the Defense Intelligence Agency).[1] The data also did not include most employees in the legislative or judicial branches, the postal service, or the military service.[2]

The data were provided as records on each employee without personal identifiers such as name or social security number. Data elements provided for each employee included their employing agency, date of birth, sex,

[1]These agencies do not submit data to OPM for inclusion in the CPDF, or their data were so fragmentary that they warranted exclusion.

[2]In the judicial branch, only the Administrative Office of the U.S. Courts is included in CPDF. In the legislative branch, only GAO, the Government Printing Office, Prospective Payment Assessment Commission, and the U.S. Tax Court are included.

race/national origin, geographic location, occupation, and service computation date.

We then attempted to use published data from BLS to describe the demographic composition of the nonfederal labor force. However, the published BLS data on the civilian labor force did not distinguish between the federal and nonfederal sectors. Thus, a comparison of federal demographic characteristics with the civilian labor force would, in part, be a comparison of the federal government with itself.[3] We therefore requested and BLS provided unpublished data from CPS microdata files, which distinguished between the federal and nonfederal civilian labor forces.[4] The nonfederal data also allowed distinctions between private sector and state and local government employment and between white-collar and blue-collar employment.

The CPS data on the nonfederal civilian labor force included both employed persons and persons who were unemployed but looking for work.[5] The federal CPDF data with which the nonfederal CPS data were to be compared included only employed persons (i.e., the federal workforce). Because we wanted to compare like entities (the federal workforce and the nonfederal workforce), we decided to focus our analysis on that portion of the nonfederal civilian labor force that was employed at the time of the survey. Any persons in the nonfederal civilian labor force who were not working at the time of the survey were eliminated from the analysis.

The CPS data on the employed nonfederal labor force included farm workers, self-employed workers, and unpaid family workers. Because we believed these types of employment were dissimilar to federal employment, we excluded these workers from what we considered the comparable "nonfederal labor force."

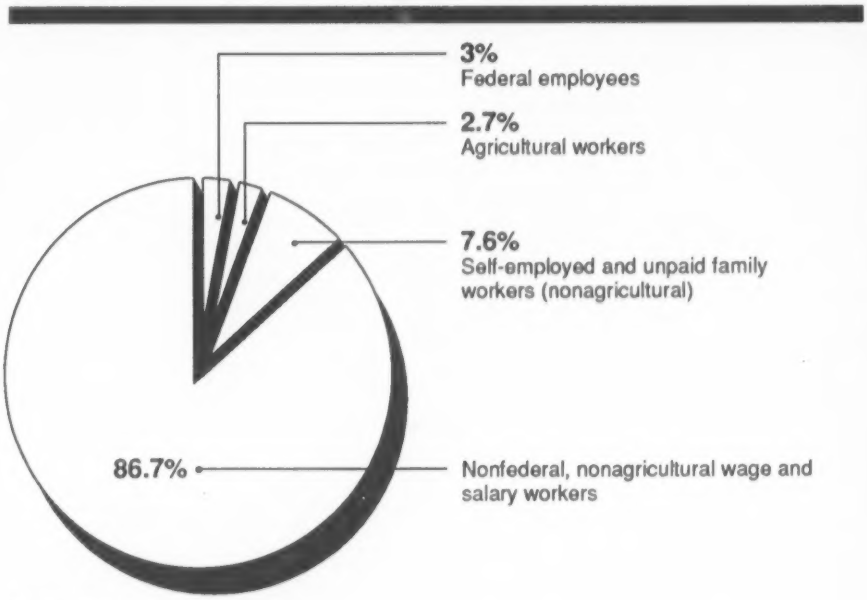
[3]This type of comparison was made in Civil Service 2000. See, for example, table 2-3 on page 25 of that report, which compared women's share of the total workforce with women's share of the federal workforce.

[4]The CPS is done by the Bureau of the Census for BLS. This monthly survey of the population is done using a scientifically selected sample of households representative of the civilian noninstitutional population of the United States. Microdata files have individual employees as their units of record, thereby allowing the data to be analyzed in several ways.

[5]The civilian labor force covers the noninstitutional population age 16 and over. It does not include members of the armed forces.

The remaining portion of the nonfederal labor force included wage and salary workers in the private sector and in state and local governments.[6] This covered over 102 million of the nearly 118 million persons in the civilian workforce in 1990. Figure I.1 illustrates the portion of the total civilian workforce that is nonfederal, nonagricultural wage and salary workers and the components of the civilian labor force that were excluded in the analysis.

Figure I.1: Nonfederal, Nonagricultural Wage and Salary Civilian Workforce Used in This Analysis Is a Major Portion of the Total Civilian Workforce



Source: BLS.

Private Sector and State/Local Differences Within the Nonfederal Workforce

The nonfederal workforce includes both private sector employees (about 88 million workers in 1990) and state and local government employees (about 14 million workers in 1990). Although private sector and state and local workers are combined in this report as the "nonfederal" workforce, there are some differences in their demographic composition that should be noted. As table I.1 shows, in 1990 the state and local workforce had a much higher percentage of female employees, had a somewhat larger

[6]Some nonagricultural wage and salary workers are "self-employed, incorporated," and pay themselves a salary; in this study they are considered wage and salary workers. Also, "private household workers" are considered private sector wage and salary workers.

percentage of Black employees, and had a smaller percentage of workers below the age of 25 than did the private sector.

Table I.1: Private and State/Local Workforces Were Somewhat Different in Gender, Race/National Origin, and Age Composition in 1990

Gender	Private	State/local	Nonfederal
Male	54.6	43.4	53.0
Female	45.4	56.6	47.0
Race/ national origin			
White	79.3	77.4	79.1
Black	9.8	13.9	10.4
Hispanic	7.8	5.7	7.5
Asian/other	3.0	2.9	3.0
Age			
16-19	6.4	2.1	5.8
20-24	12.4	6.4	11.5
25-34	30.4	24.4	29.5
35-44	24.5	31.4	25.4
45-54	15.4	21.4	16.2
55-64	8.7	11.8	9.1
65 +	2.4	2.6	2.4

Source: BLS

Because the private sector had about six times as many employees as state and local governments, the nonfederal labor force generally resembled the private sector more than state and local governments.

Methodological Notes

The CPDF data on the federal workforce is a full census and as such represents as close to an actual count of federal employees as is available. Nevertheless, OPM pointed out when it provided the data to us that the CPDF reflects direct agency submissions of employee data, and the data are subject to various types of undetectable errors (e.g., miscoded sex). OPM said that even though it attempts to ensure CPDF data accuracy, some errors still may occur. The CPS data, on the other hand, are drawn from a survey of a sample of the population and thus are subject to sampling and nonsampling errors.[7]

[7]For more information on the CPS sampling and nonsampling errors as well as other CPS methodological issues, see the expanatory notes of Employment and Earnings, BLS (Jan. 1991), pp. 241-268.

In providing the CPS data, BLS noted that because the data are unpublished, they should not be regarded as official BLS estimates. BLS also noted that a number of changes were made in CPS methodology over the 1976 through 1990 time period. The most significant of these changes was the introduction of population controls for Hispanics and illegal immigrants in 1985 and 1986. This had the effect of artifically increasing Hispanic percentages by about 1 percentage point between 1984 and 1986 (with corresponding decreases in estimates for non-Hispanics). Thus, the race/national origin data for 1986 through 1990 are not directly comparable to those for earlier years unless this effect is considered.

These technical considerations notwithstanding, we believe that the CPDF and the CPS are the best data sources available to represent the federal and nonfederal workforces in this study. The data may, however, differ from other published data on the federal and nonfederal workforces due to differences in populations covered, "as-of dates," or other parameters.

Scope Limitations

We did not attempt to review every published article and report that addressed Workforce 2000's and Civil Service 2000's conclusions. The articles discussed in chapter 2 of this report do, however, represent common themes in the literature regarding the possibility of labor shortages and skills mismatches by the year 2000. We did not independently verify either the federal CPDF data or the nonfederal CPS data. Nevertheless, we believe each data source to be the best available demographic data to describe their respective populations.

Major Contributors to This Report

General Government Division, Washington, D.C.	Robert E. Shelton, Assistant Director, Federal Workforce Future Issues Curtis W. Copeland, Project Manager Craig A. Bright, Deputy Project Manager Torvall L. Nelson, Evaluator

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